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MONETARY **POLICY REPORT**

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Monetary Policy in Colombia

Banco de la República (the Central Bank of Colombia) is required by the Constitution to maintain the purchasing power of Colombia's currency in coordination with general economic policy.[1] In order to fulfill this mandate, *Banco de la República's* Board of Directors (hereafter BDBR) has adopted a flexible inflation-targeting scheme, by which monetary policy actions (MP) seek to lead inflation to a specific target and achieve maximum levels of sustainable output and employment.

The flexibility of this scheme allows the BDBR to maintain an adequate balance between reaching its inflation target and smoothing output and employment fluctuations around their sustainable growth paths. The BDBR has set a 3.0% inflation target based on annual change in the consumer price index (CPI). In the short term, inflation may be affected by factors outside of monetary policy control, such as changes in food prices due to climate-related phenomena. To factor in this reality, the BDBR has also set a ±1 percentage point range outside its inflation target (i.e., 3.0 ± 1 pp). This range does not represent a monetary policy target, but rather reflects the fact that inflation can fluctuate around the target and will not always be equal to 3.0%.

The main instrument the BDBR uses to control inflation is the policy interest rate (overnight repo rate, or benchmark interest rate). Given that monetary policy actions take time to fully affect the economy and inflation,[2] the BDBR assesses the inflation forecast and inflation expectations vis-à-vis the inflation target, as well as the current situation and outlook of the economy, in order to determine their value.

The BDBR meets once a month, producing monetary policy decisions in eight of its meetings (January, March, April, June, July, September, October, and December). In principle, no such decisions are made in the BDBR's four remaining meetings (February, May, August, and November).[3] At the end of the meetings in which monetary policy decisions are produced, a press release is published, and a press conference is held by the Governor of the Central Bank and the Minister of Finance. The minutes of the meeting describing the positions that led the BDBR to its decision are published on the third business day. Additionally, the Monetary Policy Report (MPR),[4] produced by the Central Bank's technical staff, is published in January, April, July, and October, on the second business day. On the fourth business day following the Board meeting, the Bank's Deputy Technical Governor presents the MPR. This dissemination scheme[5] seeks to deliver relevant and up-to-date information to contribute to better decision-making by the agents of the economy.

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1 Political Constitution of Colombia (1991), Article 373 and Decision C-481/99 of the Constitutional Court.

2 For further details, see M. Jalil and L. Mahadeva (2010). "Transmission Mechanisms of Monetary Policy in Colombia", Universidad Externado de Colombia, School of Finance, Government, and International Relations, ed. 1, vol. 1, no. 69, October.

3 A Board Member may request an extraordinary meeting at any time to make MP decisions.

4 Formerly known as the Inflation Report.

5 The current communication scheme was approved by the BDBR in its May 2023 meeting.

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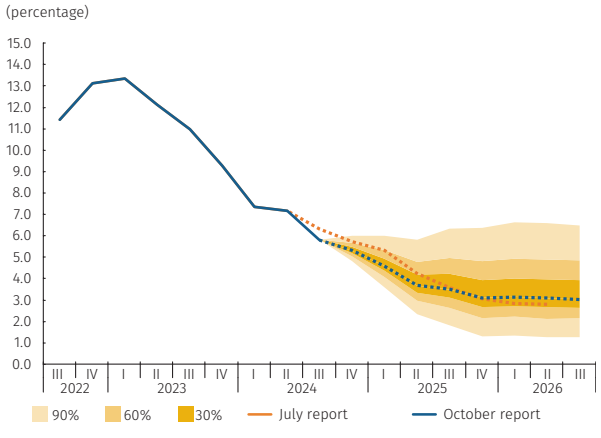
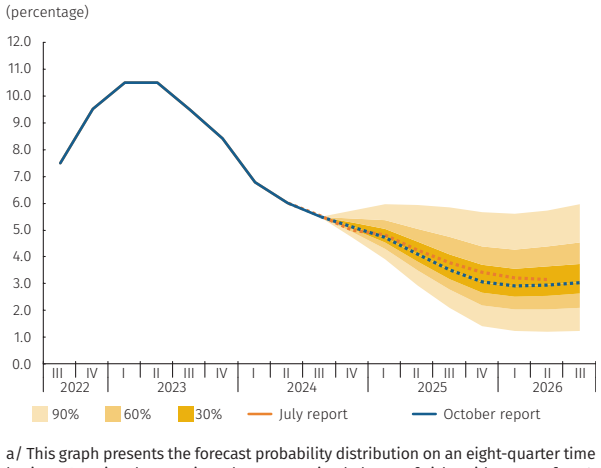
Consumer Price Index[a/b/]
(annual change; end-of-period)



a/ This graph presents the forecast probability distribution on an eight-quarter time horizon. Density characterizes the prospective balance of risks with areas of 30%, 60%, and 90% probability surrounding the central forecast (mode), through a combination of densities from the Patacon and the 4GM monetary policy models.
b/ The probability distribution corresponds to the forecast exercise from the October report.
Source: DANE – calculations and projections by *Banco de la República.*

Graph 1.2
CPI excluding food and regulated items[a/b/]
(annual change; end-of-period)



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b/ The probability distribution corresponds to the forecast exercise from the October report.
Source: DANE – calculations and projections by *Banco de la República.*

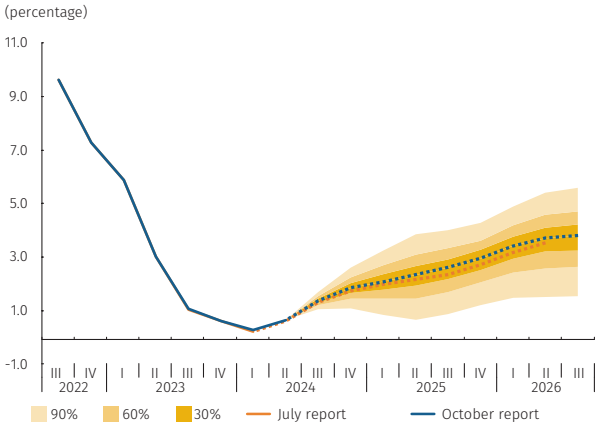
1.1 Macroeconomic Summary

In September, headline inflation (5.8%) fell more than projected in the last *Report*, while core inflation figures (5.5%) aligned with forecasts. **The cumulative monetary policy events and the unwinding of certain shocks that affected prices will continue to contribute towards the convergence of inflation to its 3% target over the forecast horizon.** In the third quarter, all major CPI groups except services decelerated at a somewhat faster pace than foreseen in the *July Report*. The biggest downward surprise in annual change versus the forecast was observed in regulated items, driven by the behavior of electricity and fuel prices. In the case of food and goods, the largest annual reduction was explained by an improvement in the supply of perishable foods along with lower international prices and costs. The services group also exhibited slower price increases, although not as pronounced as expected due to upward surprises in rents and food away from home, which outweighed the lower annual changes observed in education and fixed and mobile telephone services. Considering these trends, the yearend forecast for headline inflation was revised downward to 5.3% from the previous figure of 5.7%, and that for core inflation (excluding food and regulated items) from 5.1% from 5% (Graphs 1.1 and 1.2). Consistent with the expectations of the previous *Report*, headline inflation would continue its downward path to converge with the target by the end of 2025. This projection includes an upward annual change adjustment to regulated items, ending 2025 at 4.5% versus the former figure of 3.2%, as expected increases in some of this basket's components have been deferred to next year given a backdrop of high uncertainty surrounding the supply of certain public services. It also incorporates a somewhat higher-than-expected 2% annual change in the food CPI towards yearend 2025 versus the previous 1.2%. In contrast, core inflation would be lower than foreseen, falling by the end of 2025 to 3% (previously 3.4%), partly due to the indexation of some CPI groups to estimated lower inflation in 2024 and lesser exchange rate pressures resulting from slightly looser external financial conditions following the monetary policy decisions taken by the world's main central banks. Moreover, the cumulative effects of local monetary policy - reflected in an output gap expected to continue in negative territory during the following year and lower inflation forecast for next year - would continue to contribute towards an ongoing downward inflation trajectory towards the target, falling at 3.1% by the end of 2025. These forecasts remain highly uncertain in the face of future exchange rate

behavior, possible supply shocks affecting food prices, provisions concerning price adjustments of certain regulated goods and services, and the increase of the minimum wage for next year, among others.

Estimated economic growth for 2024 and 2025 has been revised upward from 1.8% and 2.7% to 1.9% and 2.9%, respectively. Annual GDP growth in the second quarter (1.8%) fell close to projections, as domestic demand ended three consecutive quarters of rises and a higher-than-expected annual growth (1.6% versus the 0.3% estimated), primarily attributed to a higher consumption performance (1.6% versus the 0.2% estimated). Gross fixed capital formation reached 2.2%, also surpassing expectations (0.5%). Net external demand was a negative contributor to annual GDP growth, as imports revealed annual increases beyond forecasts. Economic activity figures for the third quarter suggest that the economy would have grown at an annual rate of 2.4%, unchanged from that expected in the *July Report*. The latter forecast, which considers transitory supply shocks recorded in August and September (oil pipelines' attacks, oil refining problems, and transport workers' strike), suggests that domestic demand would have continued to increase through both consumption and investment. External demand would have continued to contribute negatively to growth as imports increased more markedly than exports. In the remainder of 2024 and into early 2025, economic activity levels would continue to recover in an environment of external and domestic monetary policy easing compared to July forecasts, compatible with inflation levels near 3% by yearend 2025. Consequently, economic growth forecasts for 2024 and 2025 have been revised upward to 1.9% and 2.9%, respectively (Graph 1.3). These rises are explained by the upward revision of consumption and investment levels published by DANE for the first half of the year and a more dynamic and persistent boost in domestic demand during the remainder of this year and 2025, in line with more favorable local and external financial conditions. Consistent with the July forecast, excess productive capacity would expand slightly until the second quarter of 2025 and gradually fade over the forecast horizon (Graph 1.4). These estimates continue to be subject to a high degree of uncertainty resulting from external factors, including global political tensions and monetary policy decisions developments in advanced countries, as well as domestic factors, such as uncertainty surrounding fiscal policy, the path and effects of the reforms submitted to Congress, and the response of domestic demand to local financial conditions.

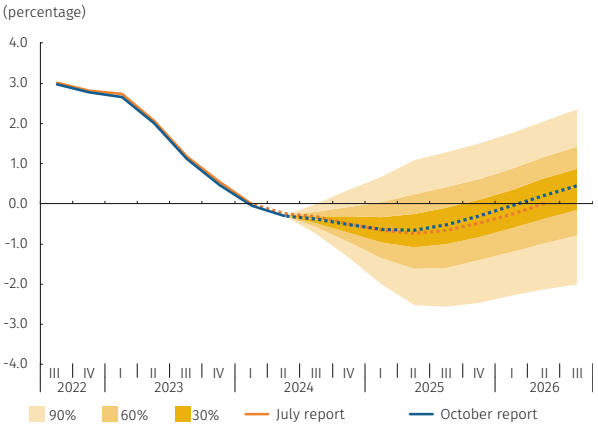
Graph 1.3
Gross Domestic Product, four quarter accumulation[a/b/c/]
(annual change)



a/ Seasonally adjusted and corrected for calendar effects.
b/ This graph presents the forecast probability distribution on an eight-quarter time horizon. Density characterizes the prospective balance of risks with areas of 30%, 60%, and 90% probability surrounding the central forecast (mode), through a combination of densities from the Patacon and the 4GM monetary policy models.
c/ The probability distribution corresponds to the forecast exercise from the October report.
Source: *Banco de la República*.

The slowdown in the country's relevant external demand has been lower than foreseen in the *July Report*, as global headline inflation continued to fall, and external financial conditions relaxed somewhat. Colombia's external demand has been more resilient than foreseen in the July estimate and is expected to recover at a slightly faster pace in 2025. Improved oil supply scenarios, along with lower-than-expected global demand for crude oil and its derivatives, diminished the pro-

Graph 1.4
Output gap[a/b/c/] - Predictive Densities
(four-quarter accumulation)

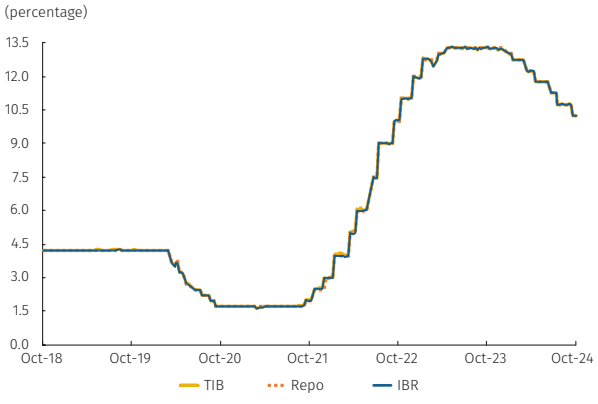


a/ The historical output gap estimate is calculated as the difference between observed GDP (four-quarter accumulation) and potential GDP (trend; four-quarter accumulation) based on the 4GM model.
b/ This graph presents the forecast probability distribution on an eight-quarter time horizon. Density characterizes the prospective balance of risks with areas of 30%, 60%, and 90% probability surrounding the central forecast (mode), through a combination of densities from the Patacon and the 4GM monetary policy models.
c/ The probability distribution corresponds to the forecast exercise from the October report.
Source: *Banco de la República.*

jected price path of oil. The terms of trade would continue below those seen in 2023, although the decrease would be less than estimated in the previous *Report* as prices of imported goods are expected to drop. In the United States, the Federal Reserve (Fed) began reducing the monetary policy rate in September more quickly than foreseen by both the market and the Bank's technical staff, and the Fed members' forecast median indicated possible additional cuts during the remainder of 2024 and into next year. In the US, headline and core inflation continued to decline in September, but their levels and expectations for 2025 still fall above the target. Additionally, output growth in the second quarter indicated a ramp-up of the economy, while the labor market has shown signs of easing during the third quarter. In this context, the FOMC also revised upward the US's long-term interest rate estimate. Consequently, the Bank's technical staff lowered its expected path of the Fed's interest rate cuts, with two additional 25 basis-point decreases for the remainder of the year and four more in 2025. The risk premium's expected course was also revised down slightly, reflecting looser external financing conditions than those expected in July. Furthermore, the external neutral real interest rate increased, consistent with the FOMC's US revisions. Uncertainty surrounding external forecasts and their impact on the country remains high, due to escalation of the conflicts in Ukraine and the Middle East, expected foreign trade performance and costs along with Colombia's sovereign risk perception, among others.

Monetary policy's contractionary stance continues to support the convergence of inflation toward the target; however, actual inflation and several measures of inflation expectations remain above 3%. Economic activity indicators for the third quarter of 2024 point to output completing four periods of quarterly increases as domestic demand would have increased once again in annual terms. In 2024, the external balance has seen a consecutive decrease over two years in the current deficit as a percentage of GDP versus previous years, with excess productive capacity close to July estimates but forecasts in 2025 would be somewhat lower. In the labor market, the unemployment rate remains at historically low levels and employment continues to increase. Credit activity continued to lessen, and households are expected to keep reducing their debt levels. This macroeconomic adjustment has led to a significant decline in headline and core inflation, as well as inflation expectations. Going forward, inflation is expected to continue to fall amid a backdrop of excess productive capacity. The prospect of declining and lower-than-estimated inflation, together with a negative output gap, allows the adoption of a less contractionary monetary policy stance, as is reflected in the Board's interest rate reduction decisions of recent months. However, observed inflation and several expectation measures that exceed the 3% target, together with an incremental balance of risks in these variables, point to the need for a contractionary monetary policy stance that continues to favor the

Graph 1.5
Monetary policy interest rate, interbank rate and BBI[a/]
(weekly data)



a/ IR: interbank rate. BBI: benchmark banking indicator.
Sources: Financial Superintendency of Colombia and *Banco de la República*.

convergence of inflation towards the target over the forecast horizon.

1.2 Monetary Policy Decision

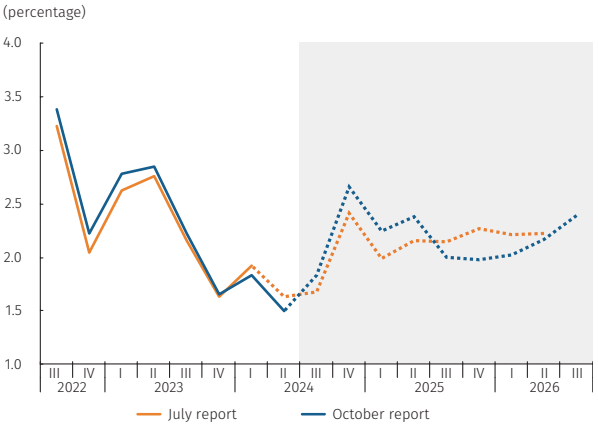
At its September and October 2024 meetings, the Board of Directors of *Banco de la República* (BDBR) determined by majority vote to reduce the benchmark interest rate by 50 basis points in each meeting, bringing it to 9.75% (Graph 1.5).

2. Macroeconomic forecasts and risk analysis[1]

2.1 International outlook

2.1.1 Foreign demand

Graph 2.1
Real GDP, main trade partners
(annualized change, projections according to full-year assumption)



Sources: Bloomberg, statistics offices and central banks, calculations and projections by *Banco de la República*.

In 2024, external demand relevant to Colombia is expected to decelerate less than anticipated in the previous Report, with a slight rebound projected for 2025 (Graph 2.1). Recently, the OECD revised its 2024 global growth forecast upward to 3.2%, a level expected to remain stable into 2025. These estimates align with the latest projections from the International Monetary Fund (IMF). Regarding growth trends for the country's main trading partners, this Report predicts a milder slowdown in 2024 than previously anticipated. In the United States, economic growth accelerated to 3.0% on an annualized quarterly basis in Q2, surpassing market expectations, largely driven by resilient household consumption and a strong, albeit more balanced, labor market.[2] Additionally, in September, the Federal Reserve began easing interest rates as inflation eased year-to-date. In other regional economies, such as Brazil and Peru, second-quarter growth exceeded expectations, with data suggesting this positive trend will continue. In contrast, weaker-than-expected growth was observed in Chile, Mexico, Ecuador, and China. Notably, Ecuador's GDP contracted by 2.2% year-over-year, while China's economic growth slowed to 4.7% in Q2 and 4.6% in Q3, following the 5.3% seen in Q1.[3] This period has enjoyed relatively favorable international financial conditions compared to last year, along with global inflation moderation, ongoing monetary easing in several countries, and the start of rate cuts in the United States (Graph 2.2). High trade and geopolitical uncertainties, particularly due to escalating conflicts in the Middle East, also persist. Given these conditions, the growth forecast for Colombia's trading partners in 2024 has been revised upward to 2.0%,[4] although this remains a dece-

1 The projections presented in this chapter are based on estimates from the Patacon and 4GM central forecast models. For more details on these models, see https://www.banrep.gov.co/es/ node/149 and https://www.banrep.gov.co/en/4gm-new-model-monetarypolicy-analysis-colombia

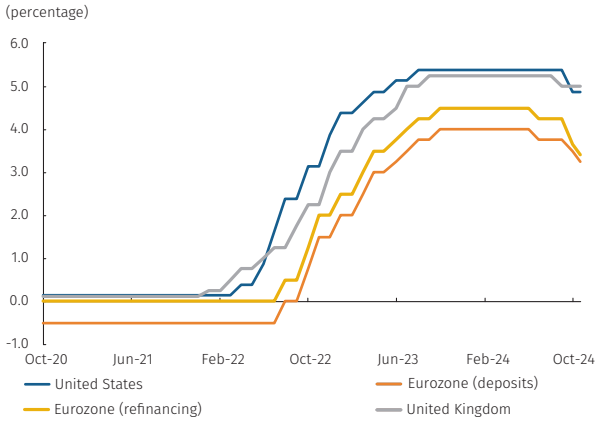
2 This follows the recent upward revision of national accounts for the post-pandemic years in that country, along with revised estimates of higher household income and a stronger personal savings rate.

3 In late September 2024, the Chinese government announced a series of monetary and fiscal stimulus measures aimed at boosting domestic demand.

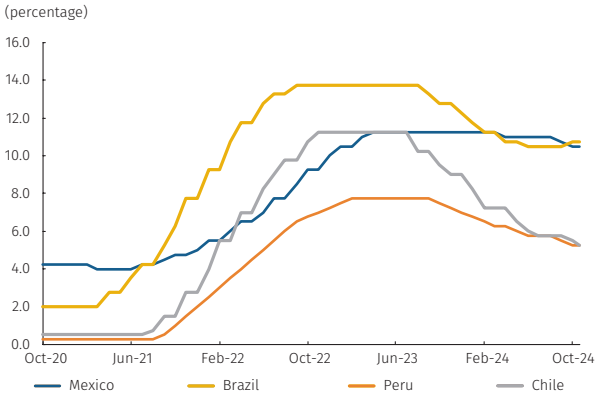
4 The July Report projected the aggregate growth for the country's main trading partners to be 1.9% in 2024 and 2.1% in 2025.

Graph 2.2
Monetary policy interest rate, select main trading partners

A. Developed Economies



B. Latin America



Note: October 2024 includes data observed on the 24th of said month.
Sources: Bloomberg.

Table 2.1
Economic growth among main trade partners[a/]

Main partners	2022 (pre)	2023 (pre)	2024 (proj)	2025 (proj)
United States	2.5	2.9	2.6	1.9
Eurozone	3.5	0.5	0.6	1.4
China	3.0	5.2	4.7	4.3
Ecuador	6.2	2.4	0.6	1.7
Brazil	3.1	2.9	2.8	2.0
Peru	2.7	-0.7	2.8	2.6
Mexico	3.7	3.2	1.6	1.7
Chile	2.1	0.3	2.4	2.4
All trade partners[a/]	3.7	2.4	2.0	2.2

(pre): preliminary, (proj): projected
a/ Projections calculated based on the contribution of non-traditional trade.
Sources: Bloomberg, Focus Economics, statistics offices, and central banks (observed data); projections and calculations by *Banco de la República*.

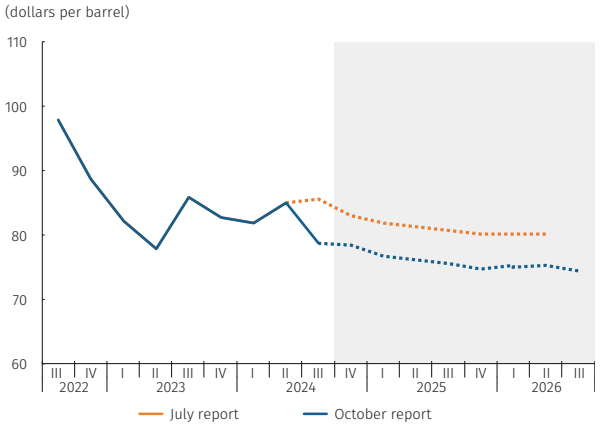
leration from the 2.4% level experienced in 2023. For 2025, trading partner growth is expected to climb to 2.2% (Table 2.1), surpassing assumptions noted in the previous Report. This rebound would occur amid continued inflation control and global interest rate reductions.

2.1.2 International Prices

In 2024 and 2025, the oil price forecast has been revised downward compared to the previous Report, due to increased crude oil supply in the market and lower demand for oil and its derivatives (Graph 2.3). In the third quarter, the average Brent crude oil price was approximately USD 79 per barrel (bl), lower than the USD 83 bl average seen in the first half of the year. This observed and anticipated price moderation is partly due to reduced oil demand in China, driven by slower economic activity, greater use of alternative fuels for road transportation, and a rise in electric vehicle adoption. Similarly, a moderation in global demand for certain oil derivatives, such as jet fuel, is observed. On the supply side, global oil production is projected to increase, supported by higher extraction levels in non-OPEC+ economies and the planned cessation of voluntary production cuts totaling about 2.2 million barrels per day in OPEC+ countries starting January 2025.[5] Consequently, a buildup in crude inventories

5 At its meeting on 03 November 2024, the OPEC+ decided to maintain the voluntary cuts established of approximately 2.2 million barrels per day through December 2024, with a gradual phase-out planned from December 2024 to November 2025.

Graph 2.3
Assumed quarterly oil price



Sources: Bloomberg, calculations, and projections by *Banco de la República*.

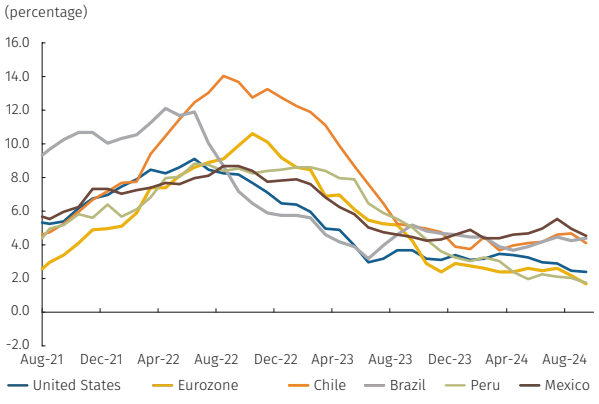
is expected over the forecast horizon. However, the decline in prices could be limited by interest rate reductions in the United States, which may stimulate crude demand, along with ongoing geopolitical tensions in the Middle East. Based on these factors, the average Brent price is assumed to be close to USD 81 bl in 2024 and USD 76 bl in 2025, lower than the previous projections of USD 84 bl and USD 81 bl, respectively. Uncertainty around the future price trajectory remains high, particularly due to potential future OPEC+ decisions and various shocks affecting the oil market.

The terms of trade are expected to decline in 2024 due to lower prices in dollars for exported commodities. Colombia's terms of trade are projected to decrease this year, primarily due to the drop in international prices for key exports, including oil, coal, and other commodities. However, this decline will be less pronounced than previously projected, owing to a sharper-than-expected reduction in the dollar prices of intermediate goods imported by the country, along with higher prices for coffee and gold. In 2025, a more significant deterioration of the terms of trade is anticipated, driven by further declines in oil and coal prices and an expected increase in the dollar prices of imported goods.

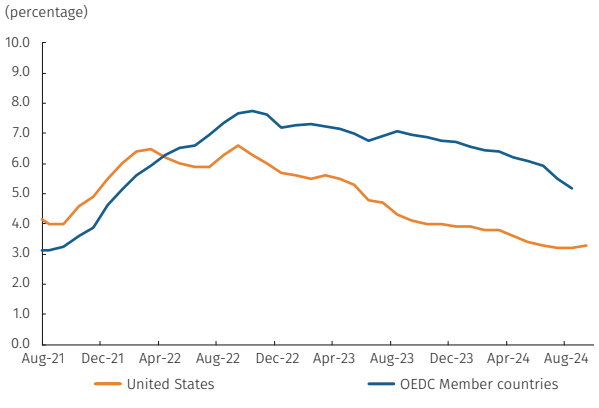
Global inflation is envisioned to continue slowing in the second half of 2024, although it is likely to remain above target in some advanced economies by yearend. In the first half of 2024, the global inflation moderation process briefly reversed due to higher international energy prices and persistent service sector price pressures. Recently, however, inflation easing has resumed amid declining international energy prices and more balanced global labor markets. Reflecting this trend, in August, headline inflation in OECD countries slowed to 4.7%, while core inflation lessened to 5.2% (down from July's 5.4% for headline and 5.5% for core inflation). Some regional economies have also shown smaller price increases, notably Peru, which recorded an annual inflation rate of 1.8% in September, below its target. Similar trends were observed in other advanced economies, including the United Kingdom, Canada, and the Eurozone, where total annual inflation for September fell below target levels (1.7%, 1.6%, and 1.7%, respectively). In the United States, headline inflation decreased to 2.4% in September from 2.5% in August, though it remained slightly above market expectations of 2.3%. This decline was supported by falling energy prices and slower increases in housing-related service prices. Meanwhile, core inflation stood at 3.3% annually in September, up from 3.2% in August (Graph 2.4). Moving forward, U.S. headline inflation is expec-

Graph 2.4
Inflation, select main trading partners

A. Headline inflation

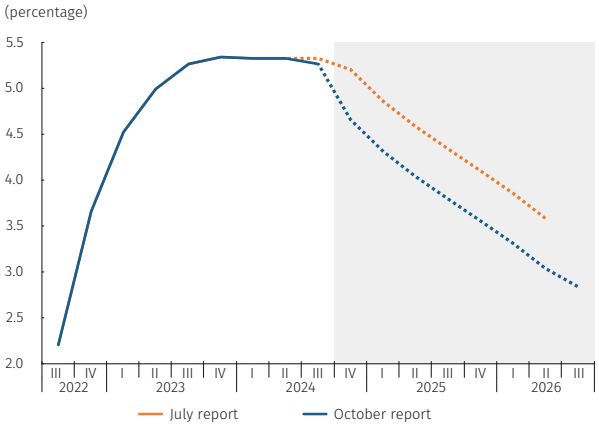


B. Inflation excluding food and energy



Sources: Bloomberg, Organization for Economic Development and Cooperation (OEDC)

Graph 2.5
Assumed U.S. Federal Reserve quarterly interest rate



Sources: Federal Reserve Bank of Saint Louis, calculations, and projections by *Banco de la República*.

ted to continue its downward trend, approaching the 2.0% target.[6]

2.1.3 International Financial Developments

The forecast for the U.S. benchmark rate has been revised downward over the forecast horizon, reflecting moderating inflation and a more balanced U.S. labor market (Graph 2.5). In its September 2024 meeting, the FOMC began easing monetary policy, lowering the policy rate by 50 basis points to a range of 4.75%–5.0%, surpassing market expectations for a 25-basis-point cut.[7] The meeting minutes clarified that this reduction should be seen as a recalibration of overly restrictive policy, rather than an indication of ongoing cuts of similar magnitude. The FOMC's median projections also adjusted its interest rate estimate downward, anticipating an additional 50-basis-point reduction through the rest of the year and a cumulative decrease of 100 basis points in 2025. Additionally, the FOMC lowered its estimates for both headline and core PCE inflation while raising its unemployment rate forecast for late 2024 and 2025.[8] Notably, since March 2024, the FOMC has been increasing its long-term interest rate estimate, culminating in a 40-basis-point upward revision as of September. Consequently, this Report incorporates an upward adjustment to the external neutral interest rate relevant to Colombia.[9] Recent U.S. labor market data, the FOMC minutes, national account revisions, and a slight uptick in annual inflation in September have led to increased futures rates for the U.S. monetary policy, aligning closely with the Fed's latest forecasts.[10] In light of these developments,

6 In the United States, according to the New York Fed's September 2024 Survey of Primary Dealers and Survey of Market Participants medians, total PCE (personal consumption expenditures) inflation is expected to be 2.0% by the end of 2024 and 2.2% for 2025. In the eurozone, according to the European Central Bank's (ECB) October 2024 survey median total harmonized inflation would be 2.2% for the fourth quarter of 2024.

7 At its meeting on 17 October 2024, the European Central Bank (ECB) reduced its main policy rate by 25 bps to 3.25%. Additionally, since September, the ECB lowered the spread between the policy rate and the refinancing rate by 35 bps, setting the refinancing rate at 3.4% in October. The post-meeting statement noted the deterioration of the economic outlook in the region, which may affect inflation moderation.

8 In September, the median FOMC projections for PCE inflation were revised down from 2.6% and 2.3% for the end of 2024 and 2025 to 2.3% and 2.1%, respectively. Core PCE inflation estimates were also lowered, from 2.8% to 2.6% for 2024 and from 2.3% to 2.2% for 2025. Furthermore, the FOMC increased its unemployment rate forecast to 4.4% for both the end of 2024 and 2025.

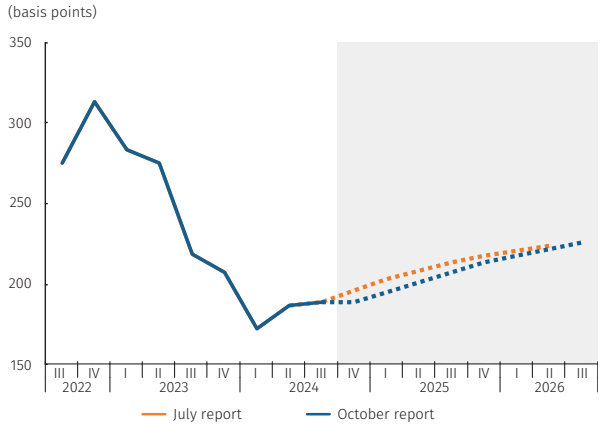
9 Colombia's real neutral interest rate (RNI) is estimated for central forecasting models as the sum of the U.S. RNI and the trend risk premium, under the uncovered interest rate parity condition.

10 As of October 25, futures associated with the monetary policy interest rate for the end of 2024 and 2025 increased to 4.52% for the end of 2024

the assumption for the U.S. monetary policy rate in 2024 has been revised downward, with two additional 25-basis-point reductions anticipated in the final meetings of the year. These cuts would place the rate between 4.25% and 4.50% by yea-rend. In 2025, further 25-basis-point reductions are expec-ted to gradually lower the rate to a range of 3.25%–3.50% by year-end. Uncertainty around this assumption stems from the recent trends in the U.S. labor market, mixed signals in domestic economic activity, fears of a recession, and politi-cal uncertainties surrounding the upcoming U.S. presidential elections.

For 2024 and 2025, Colombia's risk premium is projected to be slightly lower than anticipated in the previous report (Graph 2.6), though it is expected to increase over the fore-cast horizon. In the third quarter, financial conditions and international markets displayed high volatility, marked by an increase in risk aversion in early August. This spike was due to a strong market reaction to Japan's interest rate hike and lower-than-expected U.S. job creation data. However, since mid-August, volatility has moderated substantially, and mar-ket optimism has improved following the Fed's interest rate reduction. Against this backdrop, risk premiums for several emerging markets rose slightly in the third quarter (Graph 2.7, Panel A). For Colombia, the five-year credit default swap (CDS) average rose from 187 basis points (bps) in Q2 to 189 bps in Q3. Additionally, exchange rates in some regional and emerging economies depreciated compared to Q2 averages (Graph 2.7, panel B). In line with an anticipated loosening of global financial conditions due to less restrictive monetary policies in advanced economies, Colombia's risk premium is expected to be lower than projected in the previous Report, averaging 184 bps in 2024. By 2025, the five-year CDS is expec-ted to average 204 bps.[11] This projected risk premium path follows an upward trend amid heightened uncertainty regar-ding Colombia's fiscal outlook and an anticipated increase in public debt over the forecast horizon. This trajectory also factors in global uncertainties, ongoing geopolitical conflicts, and declining prices for oil and other exported commodities.

Graph 2.6
Colombia's assumed quarterly risk premium (CDS)a/



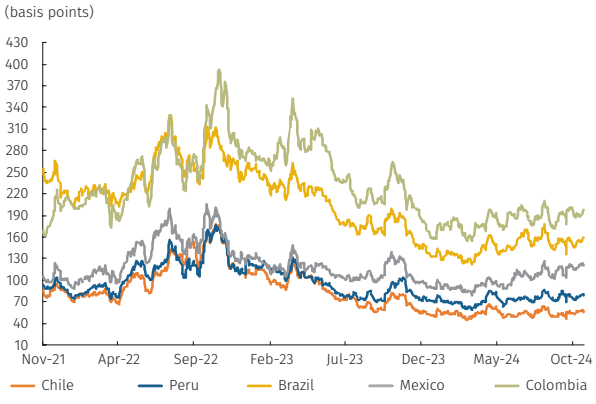
a/ Five-year credit default swaps
Sources: Bloomberg, calculations, and projections by *Banco de la República*.

and 3.52% for the end of 2025, up from 4.32% and 2.87%, respectively, as taken on September 19. The September FOMC projections are 4.4% and 3.4% for the same periods.

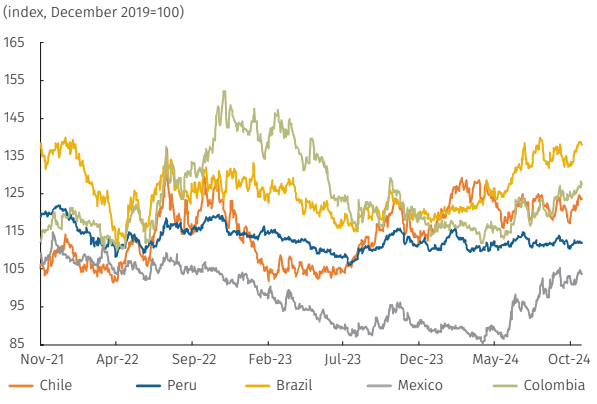
11 In the July Report, the forecast for Colombia's five-year CDs was 186 bps for 2024 and 211 bps for 2025.

Graph 2.7
Behavior of nominal exchange rate and risk premium for select Latin American countries

A. Five-year credit default swaps



B. Nominal exchange rate



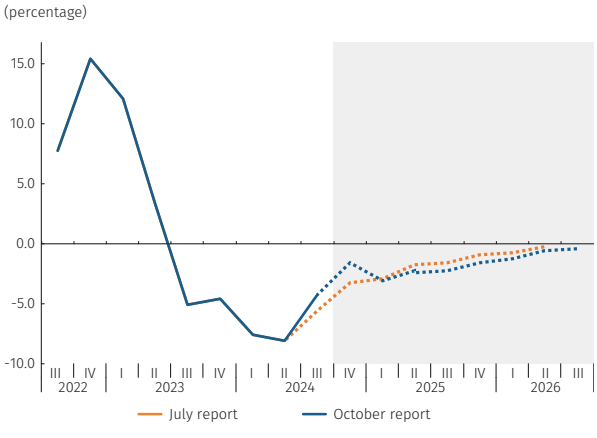
Note: Data to October 24, 2024
Sources: Bloomberg, calculations by *Banco de la República*.

2.2 Macroeconomic Projections[12]

2.2.1 Inflation

Total annual consumer inflation is projected to continue converging towards the target over the forecast horizon, with end-2024 and much of 2025 inflation expected to be lower than forecasted in the prior Report. This gradual movement towards the 3% target is supported by the effects of a contractionary monetary policy, which has led to negative output and real exchange rate gaps (Graph 2.8) along with moderated inflation expectations. Additionally, the effects of most supply shocks impacting prices in recent years, particularly in food and regulated items, are anticipated to ease. Lower inflation at the end of 2024 would also lead to reduced indexation rates for a significant portion of the consumer basket in 2025, aiding in medium-term inflation reduction. Nonetheless, due to past price pressures and their persistent effects on inflation in Colombia, inflation is expected to remain above the target for the rest of this year and much of 2025, approaching 3.0% by the end of that year. Compared to the July Report, the inflation path has been revised downward through mid-2025, with a similar convergence trend toward the target by the end of the forecast horizon. This downward revision reflects not only lower recent figures but also expected decreases in goods, food, and regulated items, driven by lower international prices, improved domestic food supply, and short-term downward shocks on electricity prices. These factors are expected to more than

Graph 2.8
Quarterly RER inflationary gap[a/]
(annual change, end-of-period)



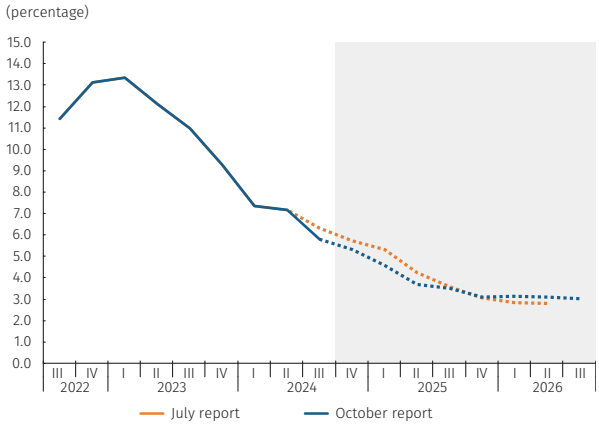
a/ The real exchange rate (RER) inflationary gap captures inflationary pressures caused by the exchange rate. Positive values imply upward inflation pressures. The gap is calculated as the deviation in the real exchange rate relative to a non-inflationary trend estimate under the 4GM monetary policy model.
Source: *Banco de la República*.

12 Projections are based on an active monetary policy wherein *Banco de la República*'s monetary policy interest rate is adjusted to guarantee alignment with the inflation target.

offset increased pressures on the services basket for 2024, primarily due to higher-than-estimated CPI figures for rents and food away from home. Toward the end of 2025, the forecast incorporates upward adjustments in food and regulated items. This adjustment accounts for expected shifts in the agricultural cycle and a deceleration in the price increases of some components within the regulated items basket. The forecasts assume normal weather conditions. However, it is important to note that the food and regulated items baskets have historically been volatile, leading to high uncertainty in these forecasts and the revisions from the previous report. Overall, the most likely inflation path projects total annual inflation at 5.3% by the end of 2024 (down from 5.7% in the previous Report), 3.1% by the end of 2025, and 3.0% by the end of the forecast horizon of this Report (Graph 2.9).

Core inflation is expected to follow a gradual convergence towards 3.0% over the forecast horizon, with an end-2025 outcome slightly below the projection mentioned in the previous Report. Core inflation, measured as the CPI excluding food and regulated items, is projected to decline steadily, nearing 3.0% by the second half of 2025 due to factors previously discussed. This trend would allow for a gradual decrease in the annual variation in service prices and relative stability in goods prices at currently low levels. Compared to the July Report, core inflation at the end of 2024 is expected to be slightly higher, largely due to an upward revision in the CPI path for rents, the largest item in the consumer basket. This adjustment reflects recent data that suggests greater inflationary inertia than anticipated, alongside stronger upward pressures from a tighter rental market. This tighter market has been influenced by low housing construction activity in recent quarters, among other factors (see Box 1). Additionally, the CPI forecast for food away from home and other services was revised upwards, incorporating recent, stronger-than-expected private consumption data. However, these upward pressures on services inflation are expected to weaken by 2025, offset by a lower indexation rate resulting from a projected decrease in inflation by the end of 2024. This is further supported by anticipated lower internal transportation costs due to a revised assumption on the ACPM (diesel) adjustment, affecting the cost of mobility services for passengers and goods. Regarding the CPI for goods, the reduced ACPM adjustment, combined with lower international prices and additional disinflationary pressures from the real exchange rate starting in 2025,[13] led to a downward revision for the entire forecast path.

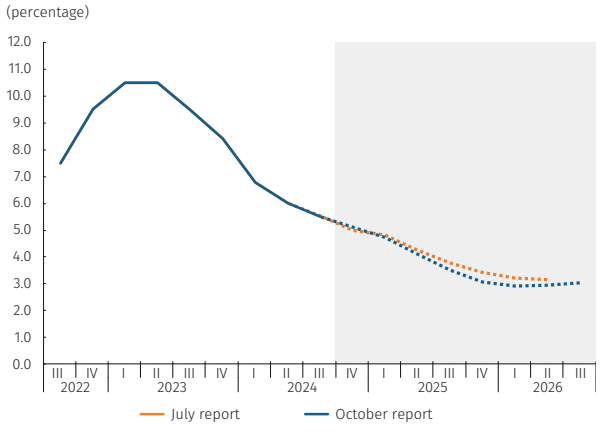
Graph 2.9
Consumer Price Index (CPI)
(annual change, end-of-period)



Sources: DANE, calculations and projections by *Banco de la República*.

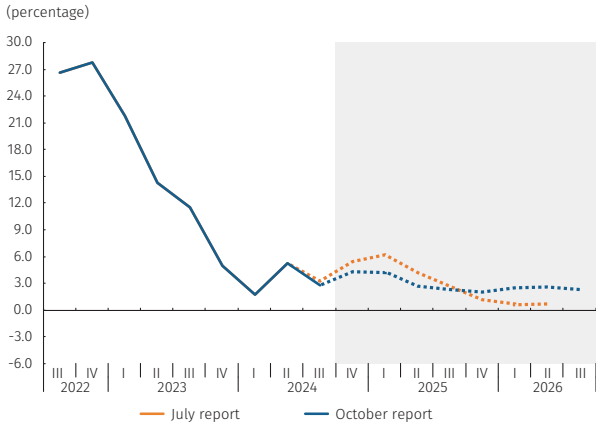
13 This Report forecasts a more negative real exchange rate gap as of 2025, given looser international financial conditions.

Graph 2.10
CPI excluding food and regulated items
(annual change, end-of-period)



Sources: DANE, calculations and projections by *Banco de la República*.

Graph 2.11
CPI for foods
(annual change, end-of-period)



Sources: DANE, calculations and projections by *Banco de la República*.

Consequently, annual core inflation has been revised downwards from 2025 onward, within a context of continued weak domestic demand and a negative output gap that is expected to gradually close over the forecast period (section 2.2.2). Based on this, the most likely forecast for annual core inflation is 5.1% by the end of 2024 and 3.0% by yearend 2025. This path assumes a minimum wage adjustment slightly above year-end inflation by around one percentage point. By 2026, core inflation is expected to remain close to 3.0% (Graph 2.10).

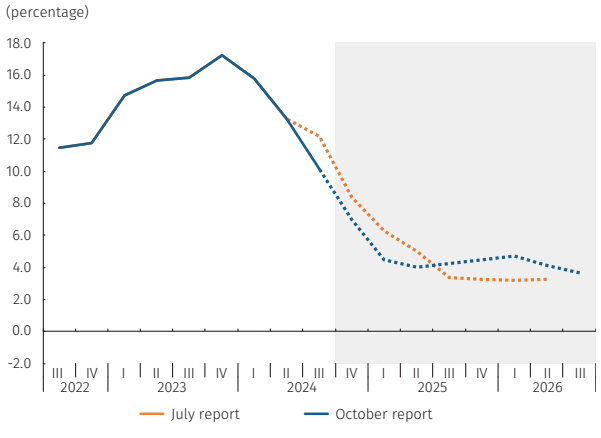
Food prices are expected to show a temporary increase in annual change for the remainder of the year before resuming a downward trend in 2025, supporting the convergence of consumer inflation towards its target. This anticipated trend is largely attributed to the agricultural food production cycle, which is expected to enter a phase of price increases by the end of this year. However, compared to the July Report, the projected path is lower until mid-2025, reflecting a slightly better-than-expected domestic food supply, lower international prices for several food items and imported inputs, and smaller increases in domestic transportation costs due to a downward adjustment in anticipated ACPM modifications. From the end of 2025 onward, the annual variation in food prices is projected to stabilize below 3%, although this is slightly higher than previously forecast due to adjustments in the expected agricultural cycle. These forecasts do not consider adverse weather conditions[14] or other disruptions to agricultural supply over the coming years. Additionally, the temporary upward impact of healthy taxes remains in effect for the end of 2024 and 2025. This forecast path is subject to high uncertainty, given its reliance on the production and distribution of perishable foods—a category prone to high volatility and frequent supply shocks. Considering these factors, the most likely scenario projects an annual food price variation of 4.3% by yearend 2024. By the end of 2025 and onward, this variation is expected to approach 2.0% (Graph 2.11).

The downward surprises in regulated prices during the third quarter suggests a smaller annual adjustment for the rest of this year and the start of 2025; however, projections for the end of 2025 have been adjusted upward due to cumulative pressures. The expected trend remains descending until mid-2025, but at levels above headline inflation throughout the forecast horizon. This reflects the impact of high—though declining—indexation rates, the recognition of costs

14 According to the most recent NOAA report, La Niña conditions are expected between September and November of this year with a 60% probability and are forecasted to persist until January and March 2025.

and investments necessary for maintaining public service supply, and the influence of certain international prices on local rates. Compared to the July Report, the forecast path has been revised downward through mid-2025, largely due to lower-than-expected utility costs, particularly in electricity. This is further supported by a lower inflation expectation for late 2024, which moderates indexation rates for much of the regulated items basket. However, starting in 2025, the basket is anticipated to encounter renewed upward pressures, leading to a higher projected path from the second half of the year onward. These pressures include the full normalization of toll rates, delayed from 2024 to 2025, and increased adjustments in electricity and gas rates due to postponed investment needs and internal supply challenges, respectively. Given these factors, the regulated items' CPI annual variation is most likely to reach 7.0% by the end of 2024 and 4.5% by the end of 2025 (Graph 2.12), with a gradual decrease expected to bring values below 4% during 2026. However, predicting the exact impact of these interacting factors on prices remains challenging, and the forecast continues to face substantial uncertainty.

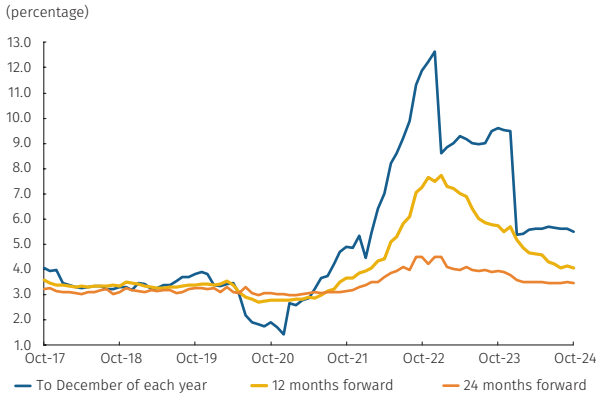
Graph 2.12
CPI for regulated items
(annual change, end-of-period)



Sources: DANE, calculations and projections by *Banco de la República*.

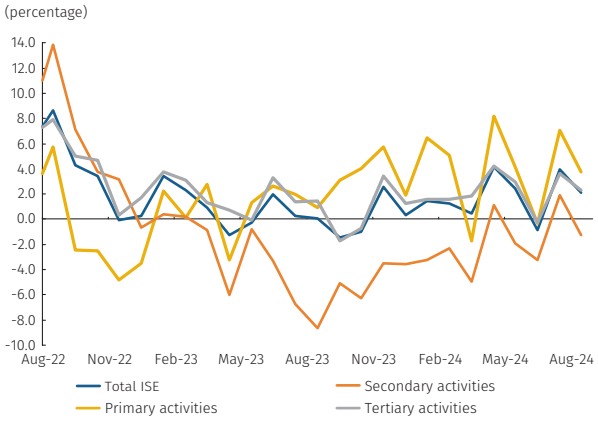
Inflation expectations decreased or held steady compared to the July survey, continuing a descending path toward the target as the forecast term lengthens, though most measures remain above 3%. The expectations of economic analysts, obtained from the monthly Survey of Economic Analysts conducted by *Banco de la República* between October 8 and 10 (Graph 2.13), suggest yearend total median and core inflation (excluding food and regulated items) would stand at 5.5% and 5.1%, respectively, both slightly lower than the July survey projections of 5.7% and 5.2%. By the end of 2025, these measures are projected to be around 3.8% for headline inflation and 3.6% for core inflation. Two- and five-year ahead headline inflation median expectations remained unchanged at 3.5% and 3.0%, respectively. Specifically for food and regulated items, the annual variation of median expectations stands at 4.2% and 7.8% for the end of 2024 (down from 5.1% and 8.7% in the July survey) and 3.9% and 5.0% for yearend 2025 (compared to 4.0% and 4.8% in July). As of October 25, estimates based on public debt bonds (break-even inflation or BEI), adjusted for inflationary risk and liquidity premiums, indicate relatively stable inflation expectations, with two-, three-, and five-year maturities at 3.2%, 3.4%, and 3.5%, respectively, only slightly changed from the July levels of 3.3%, 3.3%, and 3.4% (see Box 2).

Graph 2.13
Bank and stockbroker inflation forecast[a/]



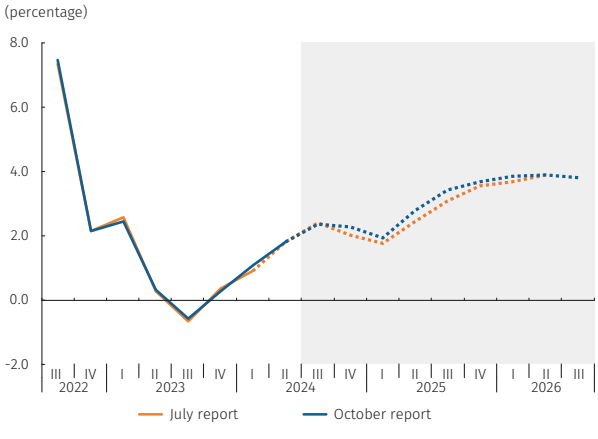
a/ Corresponds to the median response of the Monthly survey of economic analyst expectations conducted by *Banco de la República*.
Sources: DANE, calculations and projections by *Banco de la República*.

Graph 2.14
Economic Tracking Indicator (ISE), and ISE by sectors[a/, b/]
(annual change)



a/ Seasonally adjusted and corrected for calendar effects
b/ Primary activities: agriculture, hunting, forestry and fishing, mine and quarry exploitation. Secondary activities: manufacturing industries and construction. Tertiary activities: electricity, gas, and water supply; commerce, repairs, transportation and lodging; information and communications, financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support services; public administration and defense, education and health; arts and entertainment.
Sources: DANE, calculations and projections by *Banco de la República*.

Graph 2.15
Quarterly GDP[a/]
(annual change)



a/ Seasonally adjusted and corrected for calendar effects
Sources: DANE, calculations and projections by *Banco de la República*.

2.2.2 Economic Activity

In the third quarter, the Colombian economy would have continued to gradually accelerate gain gradual , with annual growth surpassing that of the first half of the year, consistent with forecasts in the previous Report. The Economic Monitoring Indicator (ISE; Graph 2.14) for August and data available through September[15] suggest that the Colombian economy grew at an annual rate of 2.4%—higher than the second quarter's (1.8%) and matching the forecast in the July Report (Graph 2.15). This annual growth rate, corresponding to an annualized quarterly rate of 0.8%, implies that GDP remained at levels slightly above those of the previous quarter. On the supply side, projected annual growth was mainly driven by the performance of the primary and tertiary sectors. Growth in the primary sector was largely attributed to agricultural activities, especially crop production (including coffee) and livestock, though partially offset by weaker mining activity due to low coal and oil production. Oil output was particularly affected by temporary supply shocks, such as issues with refining capacity in August and a truckers' strike in September. In the tertiary sector, marginal improvements continued, supported by public administration, healthcare and education services, artistic and entertainment activities (boosted by online gaming and sports betting), trade and freight transportation, passenger transportation, and financial and insurance services. Meanwhile, in the secondary sector, manufacturing continued to show annual declines and consistent levels to those of the first half of the year. However, construction recorded a stronger performance, mainly due to improvements in civil works.

Between June and September, domestic demand is expected to have accelerated significantly in annual growth terms, though this increase is largely attributed to a low base of comparison rather than an actual rise in levels. For the third quarter, forecasts indicate a cumulative annual increase of 3.3% in domestic demand; however, this growth would not have resulted in a level higher than that of the previous quarter. Even so, domestic demand would have achieved two consecutive quarters of positive annual growth following negative rates seen in the first half of the year and throughout 2023. In terms of levels, the third-quarter figure is projected to be very close to the level suggested by the pre-pandemic trend for this component. Similar to the second quarter, the

15 This includes, among others, the regional economic pulse, consumer credit disbursements, electronic payments, vehicle and motorcycle registrations, monthly exports and imports, ground freight movement, and air passenger traffic.

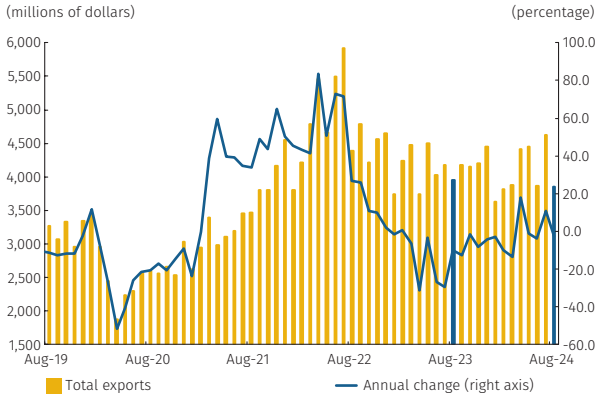
third quarter's domestic spending performance likely continued to benefit from annual expansions in both consumption and total investment.

In this Report, forecasts for total consumption, particularly private consumption, have been revised upwards in light of the unexpected increase observed in the second quarter. An acceleration in annual consumption growth is anticipated for the third quarter. By component, household consumption is expected to rise this quarter and to increase from an annual growth rate of 1.7% to over 2.0%. This performance is likely to be driven by spending on services and the consumption of non-durable goods, with quarterly expansions projected for both categories. The expected growth in non-durables aligns with projections for the agricultural supply. Durable goods consumption is also expected to have reached higher levels than in the second quarter, while a decrease is anticipated in semi-durable consumption. These projections are based on data such as the ISE, retail sales, and services surveys through August, and other high-frequency indicators like consumer goods imports, vehicle and motorcycle registrations, and commercial bank transaction figures. This robust growth in household consumption likely occurred in an environment of lower interest rates and rising disposable income. Factors contributing to this increase in income include positive employment figures, sustained high levels of remittances (see Box 3), government transfers to households, and higher income among coffee-growing families. For public consumption, low annual growth similar to that seen in the second quarter is expected, along with negative quarterly growth, due to the retroactive wage adjustments that temporarily increased this component in the first and second quarters.

Investment in Colombia would have continued to show relatively low levels, albeit with positive annual growth for the second consecutive quarter, primarily driven by civil works. In the third quarter, the main contributor to the annual growth in gross capital formation was likely the "other buildings and structures" component, which also showed quarterly increases. This favorable performance was primarily supported by civil works construction, reflecting progress in various projects in Bogotá (including the metro) and other regions (such as ongoing 4G projects and the start of 5G road projects). A modest quarterly increase in investment in machinery and equipment is also anticipated, as indicated by capital goods import data. Conversely, housing investment is not expected to expand, with housing investment levels remaining like those of the second quarter, as suggested by indicators like the building census, home sales, and home purchase disbursements. Consequently, in the third quarter, fixed and total investments experienced annual growth; however, total gross capital formation levels remained low, approximately 20% below pre-pandemic levels.

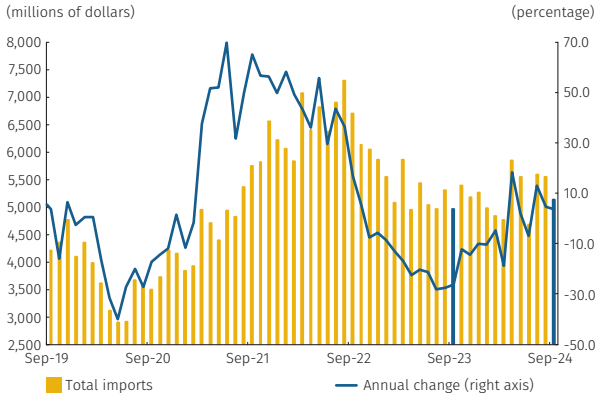
Exports in constant pesos would have continued to support economic growth; however, due to the expected acceleration of imports, the contribution of net external demand was likely negative. For the third quarter, exports are projected to expand at an annual rate of 4.0%, indicating quarterly growth as well (Graph 2.16). Monthly data through August suggest that goods exports were primarily driven by coal, manufactured products, and agricultural goods. In the case of services, the growth is expected to have been supported by non-resident tourism, as indicated by air passenger data. Regarding imports (Graph 2.17), a substantial annual increase of close to 10% is expected, partly due to a low base of comparison. This growth implies significant quarterly expansion, especially due to higher

Graph 2.16
Total goods exports (FOB)
(monthly)



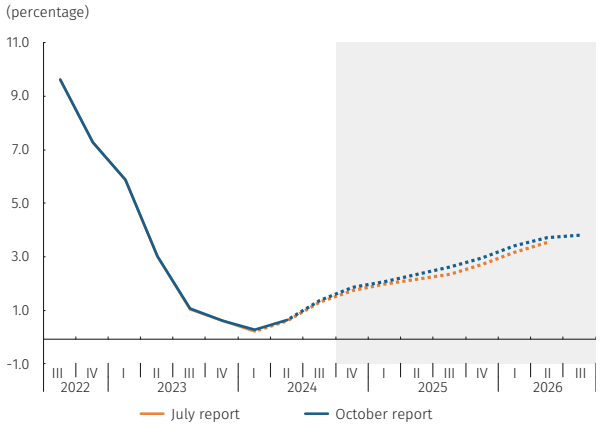
Sources: DANE, calculations by *Banco de la República*.

Graph 2.17
Total goods imports (CIF)
(monthly)



Sources: DANE and DIAN (preliminary foreign trade data); calculations by *Banco de la República*.

Graph 2.18
GDP, four-quarter cumulative[a/]
(annual change)



a/ Seasonally adjusted and corrected for calendar effects.
Sources: DANE, calculations and projections by *Banco de la República*.

purchases of capital goods and durable consumer goods. As a result, net external demand likely contributed negatively to the annual GDP variation for the second consecutive quarter.

This Report raises slightly the 2024 economic growth forecast, indicating higher economic activity levels in the fourth quarter compared to the third. For the year as a whole, total consumption is expected to grow at a slightly higher annual rate than in 2023 (1.0%), with a clear recovery trend emerging from the second quarter onward. This growth would be driven by household consumption, with levels in the fourth quarter expected to surpass those of the third quarter, which are already high compared to pre-pandemic figures. This improved performance aligns with easing financial conditions observed throughout 2024, which are expected to continue for the rest of the year. Contributing factors include a notable reduction in inflation, favorable employment trends, and increased external income to households from remittances and coffee exports, among others. Public consumption is projected to remain relatively stable for the rest of the year, as per estimates from the Medium-Term Fiscal Framework (MFMP). This forecast also considers the adjustment in public spending announced by the Government for the second half of the year, which is a response to the reduction in projected revenue. Consequently, public consumption is expected to grow in 2024 at a rate similar to that of 2023 (1.6%). Investment is also anticipated to perform better toward yearend, supported by increased civil works activity. As a result, total investment for 2024 should show growth relative to the low levels recorded in 2023. In the external sector, stronger export activity is still foreseen through the remainder of the year, along with a continued recovery in imports. Overall, the Colombian economy is projected to grow by 1.9% in 2024, a slight increase from the 1.8% forecast in the previous Report (Graph 2.18). This revision reflects both the upward adjustments in consumption and investment levels published by DANE for the first half of the year and the stronger-than-expected momentum in domestic demand for the remainder of 2024.

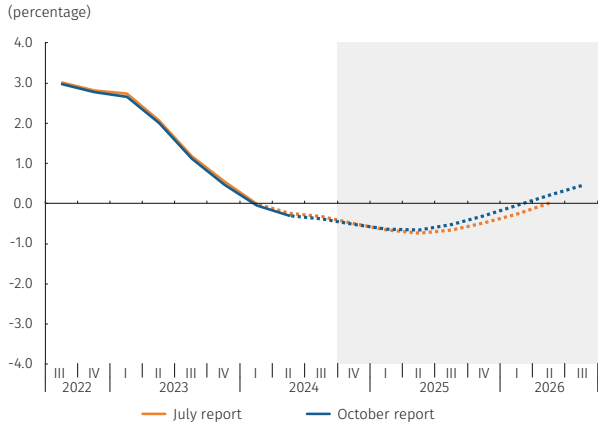
For 2025, the economy is expected to continue improving, gradually approaching its potential level with a growth rate near 3.0%. This Report maintains expectations of lower financing costs, both external and domestic, which would support greater dynamism in domestic demand and exports. This outlook aligns with anticipated growth acceleration among trading partners, increased remittances from abroad, continued growth in tourism exports, and full access to external financing. Consequently, annual growth of 2.9% is expected for 2025, slightly higher than the 2.7% forecast in the previous Report, reflecting a more sustained boost to domestic

demand and somewhat less restrictive financial conditions (Graph 2.18). However, this forecast remains subject to significant uncertainty, particularly due to ongoing volatility in international financial conditions and the challenges associated with fiscal adjustment in Colombia.

The unemployment rate is expected to remain relatively stable for the rest of 2024 and into 2025. The information available as of August from the Integrated Household Survey (GEIH for its Spanish acronym) as of August indicates a labor market with stronger employment momentum. The global labor force participation rate (GPR) saw a slight rise, reaching 64.2%. As a result, the national unemployment rate has remained stable with marginal reductions. Specifically, for the rolling quarter ending in August, the unemployment rate fell compared to July, standing at 10.2%.[16] Based on labor market trends and the economic activity projections presented in this Report, the seasonally adjusted unemployment rate is estimated to range between 9.9% and 10.8% in 2024, with a most likely value of 10.3% for both the national aggregate and the thirteen main cities, which is slightly lower than the previous Report's projections. For 2025, this indicator is expected to remain stable, averaging between 8.4% and 12.0% for the national aggregate, with 10.2% as the most likely figure. In urban areas, the unemployment rate for 2025 is projected to average between 8.6% and 12.2%, with 10.4% as the most probable value. Accordingly, estimates for an unemployment rate consistent with stable inflation (non-accelerating inflation rate of unemployment, or NAIRU) indicate that, over the forecast period, the unemployment rate will gradually converge toward its long-term value, reducing the negative unemployment rate gap.

Throughout 2024, the annual output gap has remained in negative territory. Moving forward, the economy is expected to continue experiencing excess productive capacity until early 2026, albeit slightly less than projected in the July Report. This excess productive capacity as of September aligns with GDP growth that has been below its potential, a decrease in both headline and core annual inflation during the third quarter, and continued restrictive local and external financial conditions. Specifically, the central forecast scenario of this Report projects an annual output gap of approximately -0.5% by the end of 2024, consistent with the July Report estimate (Graph 2.19). These figures suggest a full-year potential GDP growth rate of 2.9%. For 2025, excess productive capacity is expected to decline gradually starting in the second half of the year as economic activity stren-

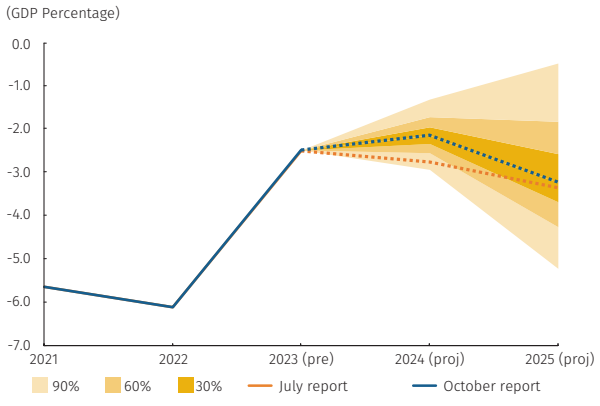
Graph 2.19
Output gap[a/]
(four-quarter cumulative)



a/ The historical estimate of the output gap is calculated as the difference between observed GDP (four-quarter cumulative) and potential GDP (trend; four-quarter cumulative) from the 4GM model; for the forecast, it is calculated as the difference between the technical staff's GDP estimate (four-quarter cumulative) and potential GDP (trend; four-quarter cumulative) from the 4GM model.
Sources: DANE, calculations and projections by *Banco de la República*.

16 See Chapter 3 of this Report for additional information.

Graph 2.20
Annual current account[a/, b/]
(four-quarter cumulative)



(pre): preliminary, (proj): projected
a/ The graph displays the probability distribution and its most likely path for 2023 and 2024. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode), using primarily as reference the densities from the Patacon model.
b/ The probability distribution is derived from the forecasting exercise of the October report.
Sources: *Banco de la República*.

gthens. The output gap estimate for 2025 is anticipated to be somewhat less negative than previously forecast, driven largely by expectations of higher economic growth over the forecast horizon.

2.2.3 Balance of Payments

For 2024, the current account deficit is expected to continue narrowing to 2.2% of GDP (Graph 2.20)[17]. This year, the widening of the trade imbalance of goods is expected to be more than offset by favorable trends in the services, primary income, and current transfers accounts. Specifically, the goods deficit is anticipated to widen due to lower international prices for certain raw materials, which would reduce export revenues, despite a recovery in local production of these goods.[18] Additionally, higher economic growth and more dynamic domestic demand would lead to increased expenditures on imported goods. In contrast, the services deficit is expected to decrease driven by sustained growth in exports, particularly from a vibrant tourism sector. The primary income deficit is also forecast to shrink, reflecting lower profit remittances by mining and oil companies with foreign direct investment (FDI), as well as higher income from Colombian investments abroad. Finally, the surplus from current transfers is expected to increase, due to strong inflows of workers' remittances,[19] which would further contribute to the annual reduction of the current account deficit.

In 2025, the current account deficit is expected to increase to 3.2% of GDP. This expansion would be driven by a widening goods and primary income deficits. Exports are projected to decline further due to lower international prices for the country's main export commodities. Additionally, goods imports are expected to increase as economic growth and domestic demand continue to recover, alongside higher estimated international prices for imported goods. Regarding factor income, the deficit would grow due to higher interest payments on external debt and lower returns on investments made abroad. In contrast, the services account deficit is projected to narrow, and the current transfers account would

17 For the third quarter of 2024, a current account deficit of close to 2.0% of GDP is projected, higher than the 1.8% deficit observed in the same period of 2023. This dynamic is mainly driven by the widening trade imbalance in goods and, to a lesser extent, the higher forecast deficit in services.

18 In addition, this year there will not be revenues from aircraft re-exports as seen in the previous year.

19 Workers' remittances are expected to increase in 2024 due to high levels of Colombian migration abroad observed in 2022 and 2023, as well as tight labor markets in several countries where Colombian migrants reside.

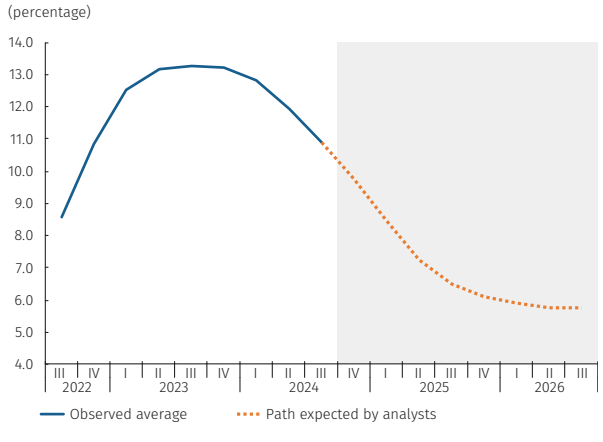
show a larger surplus, partially offsetting the current account deficit expansion. From an aggregate savings and investment perspective, the projected current account deficit for both years aligns with an increase in the public sector imbalance, partially offset by a higher private sector surplus. The public sector imbalance would be driven by low savings levels in 2024, expected to remain relatively stable in 2025, while the private sector surplus would reflect low investment levels in 2024 and a decrease in savings in 2025. Lastly, it is important to highlight the uncertainty surrounding these forecasts, given the volatility of international commodity prices, risks to local and global growth, and anticipated developments in domestic and external financial conditions, among other factors.

In both years, the country is expected to retain full access to external financing, with Foreign Direct Investment (FDI) remaining the primary source of funds. FDI inflows would gradually decrease due to lower investments in the mining and oil sectors, driven by moderating international fossil fuel prices, though FDI would still be the main source of external resources. The public sector would contribute to financing the external imbalance in both years, consistent with the anticipated increase in the fiscal deficit. Meanwhile, the private sector is projected to shift from holding assets abroad in 2024 to receiving foreign capital inflows in 2025. External financing would occur within a context of U.S. interest rates remaining above pre-pandemic levels and a Colombian risk premium staying above its historical average.

2.2.4 Monetary Policy and Interest Rates Expected by Analysts

The median analysts' expectation for the fourth-quarter policy interest rate is 9.75% for 2024. Through 2025, this rate is anticipated to continue its decline, reaching 6.1% (Graph 2.21). The median response to *Banco de la República's* monthly survey of analyst expectations, conducted at the beginning of October, averages lower over eight quarters than the policy interest rate path implied in this Report's forecast. Notably, by the end of 2025, the median inflation rate expected by analysts remains higher than the inflation projected by the Bank's technical staff. Additionally, the upward revision of the external real neutral interest rate (TINR) relevant to Colombia has resulted in an increase in the local TINR.[20]

Graph 2.21
Monetary policy interest rate: average observed quarterly, and rate expected by analysts[a/]



a/ These projections are calculated considering the quarterly average of the current rate according to the median response of the *Monthly survey of economic analyst expectations* conducted by *Banco de la República* for October 2024.
Sources: *Banco de la República.*

20 A recent increase in U.S. long-term rates and the Fed's estimate of the neutral rate led to an increase in the local neutral real interest rate. This revision averages 8 bps until the end of 2025.

2.3 Balance of Macroeconomic Risks

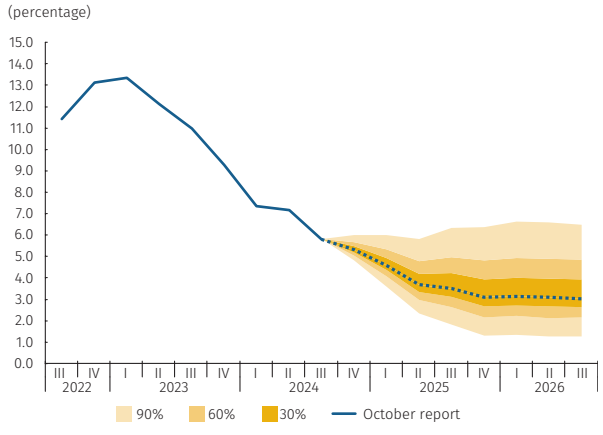
For the current balance of risks, uncertainty levels regarding certain external variables have been adjusted as compared to the previous Report, with upside inflation risks still predominant. The predictive densities (PD) exercise[21] summarizes the risk balance across multiple variables within the macroeconomic forecast and reflects some revisions to the uncertainty levels of external factors. Uncertainty over oil prices has decreased, as geopolitical tensions in the Middle East have yet to significantly impact its volatility. The initiation of interest rate cuts in the United States suggests reduced uncertainty regarding U.S. monetary policy direction. However, moderate upward risks persist for both oil prices and U.S. inflation, driven by ongoing tensions in the Middle East and inflationary pressures in the U.S. Domestically, uncertainty around price behavior and economic activity remains similar to the previous quarter. Inflation risks continue to skew upward, particularly for food, regulated items, and services. For the services sector, this upward bias reflects potential higher persistence in rent prices and a larger-than-anticipated minimum wage adjustment. The economic growth risk balance is slightly tilted to the downside, influenced by the outlook for reduced public consumption due to lower revenue collection and the need for greater fiscal adjustment, as well as the possibility of a prolonged contractionary monetary policy stance to counter inflation risks.

On the external front, risks are skewed upward for oil prices, external inflation, the Fed's interest rate, and the Colombian risk premium, while risks are balanced for the growth of trading partners and external food inflation. For oil, although price uncertainty has moderated, an upward bias remains due to various geopolitical tensions, primarily in the Middle East. Risks for the Fed's interest rate and external inflation also lean upward, influenced by stronger U.S. labor market data and the upward revision of U.S. GDP figures, alongside a raised estimate of the U.S. neutral interest rate. This combination could signal a slower pace for the normalization of U.S. monetary policy than projected in the central forecast scenario. Risks regarding the growth of Colombia's trading partners are neutral, as weaker expectations for economic activity in China and some regional countries, such as Ecuador, are offset by the potential for stronger growth in the United States. Finally, concerning external financing costs, Colombia's risk premium remains biased upward, primarily due to uncertainties and mounting challenges within the local fiscal landscape.

Trajectories for headline inflation and inflation excluding food indicate a predominance of upside risk, particularly those tied to climate shocks, structural issues in the energy sector, and the persistence of price adjustments in certain services. Overall, upward biases are evident across all price categories, with the most pronounced risks in the food and services baskets. In the case of the food basket, the primary risks stem from extreme weather events, a potential overestimation of the downward adjustments in agricultural price projections, and the impact of disruptions in international transport routes due to geopoli-

21 Technical details on the construction of the risk balance through the predictive density exercise can be found in the paper "Caracterización y comunicación del balance de riesgos de los pronósticos macroeconómicos: un enfoque de densidad predictiva para Colombia" (Méndez-Vizcaíno et al., 2021) and in Box 1 of the July 2021 Monetary Policy Report.

Graph 2.22
Consumer price index, predictive density[a/, b/]
(annual change, end-of-period)



	4Q 2024	4Q 2025	3Q 2026
Mode	5.3	3.1	3.0
< Mode	41%	33%	31%
	Intervals		
<2	0.0%	12.3%	11.9%
2 to 4	0.0%	43.4%	42.3%
>4	100.0%	44.3%	45.8%

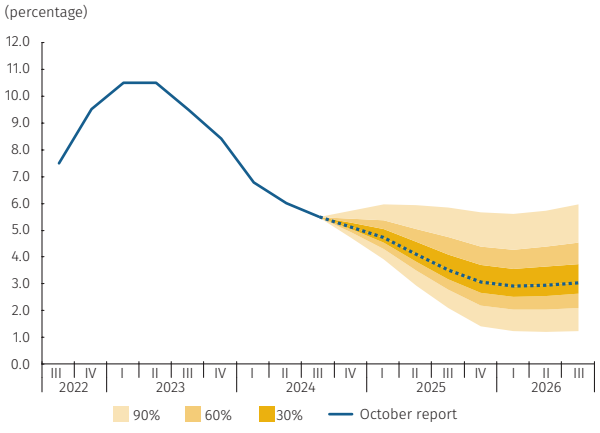
a/ The graph displays the probability distribution and its most likely path on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode), using a combination of densities from the Patacon and 4GM models.
b/ The probability distribution is derived from the forecasting exercise of the October report.
Sources: DANE; calculations and projections by *Banco de la República*.

tical conflicts. In the services basket, the main risks relate to potential inflationary inertia, especially in rent prices, and the prospect of higher labor costs. This could result from real minimum wage increases exceeding productivity gains or from impacts of the labor reform if enacted. The regulated items and goods baskets also face upward risks, though these are more moderate. For regulated prices, the primary concerns involve energy, gas, and water prices attributed to the structural challenges in these sectors. Regarding goods, risks include possible further disruptions in international goods transport due to persistent geopolitical tensions and recent tariff announcements on products like steel. Additionally, the exchange rate behavior poses an upward risk, influenced by rising long-term U.S. interest rates and escalating pressures on Colombia's public finances, with limited flexibility to meet fiscal rule requirements.

The balance of risks for economic activity shows a moderate downward bias. This Report assesses both upside and downside risk factors across aggregate demand components. On the upside, a more dynamic consumption of services, particularly in the entertainment sector, may boost economic activity. On the downside, risks include lower prospects for public consumption due to reduced revenue collection and the need for stricter fiscal adjustments, as well as economic uncertainty that may continue to dampen investment. Additionally, the PD exercise considers the risks of a potentially prolonged tightening policy stance in response to upward price pressures. Together, these downside risks contribute to a moderately downward bias in the projected economic growth and output gap paths.

In summary, the balance of risks reflects relatively high uncertainty, with upward biases for inflation and slight downward biases for growth throughout the forecast horizon. Under these conditions, there is a 90% probability that headline inflation will fall within a range of 4.8% to 6.0% by the end of 2024 and between 1.3% and 6.4% by the end of 2025 (Graph 2.22). Core inflation, with the same probability, is projected to range between 4.7% and 5.7% at the end of 2024 and between 1.4% and 5.6% by the fourth quarter of 2025 (Graph 2.23). The likelihood that headline and core inflation will drop below 4% by the end of 2025 stands at 56% and 65%, respectively. Regarding economic activity, there is a 90% probability that annual GDP growth will range between 1.1% and 2.6% for 2024 and between 1.2% and 4.3% for 2025 (Graphs 2.24 and 2.25).

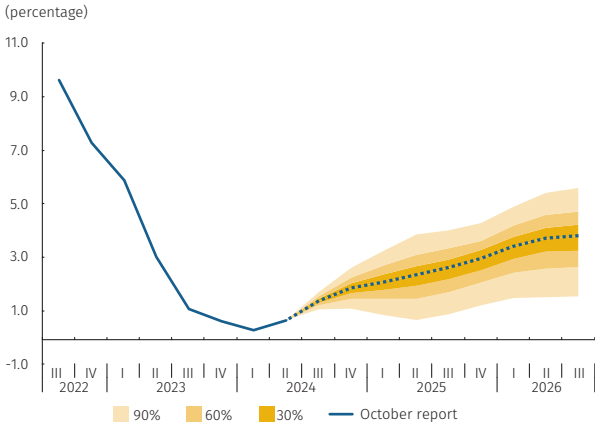
Graph 2.23
CPI excluding food and regulated items, predictive density[a/, b/]
(annual change, end-of-period)



	4Q 2024	4Q 2025	3Q 2026
Mode	5.1	3.0	3.0
< Mode	41%	36%	36%
	Intervals		
<2	0.0%	12.6%	14.0%
2 to 4	0.0%	52.5%	48.4%
>4	100.0%	35.0%	37.6%

a/ The graph displays the probability distribution and its most likely path on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode), using a combination of densities from the Patacon and 4GM models.
b/ The probability distribution is derived from the forecasting exercise of the October report.
Sources: DANE; calculations and projections by *Banco de la República.*

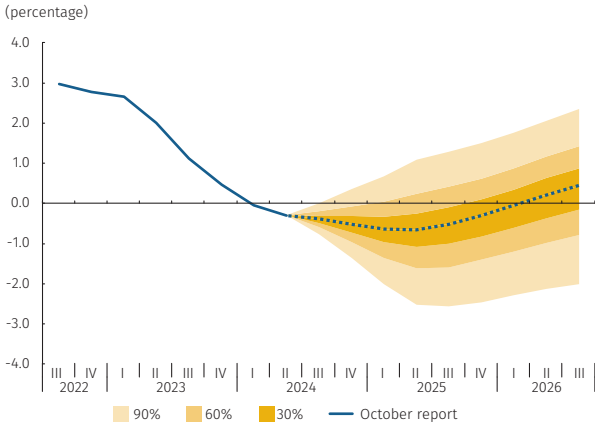
Graph 2.24
GDP, four-quarter cumulative, predictive density[a/, b/]
(annual change)



	4Q 2024	4Q 2025	3Q 2026
Mode	1.9	2.9	3.8
< Mode	52%	60%	57%
	Intervals		
<1	3.4%	2.8%	1.9%
1 to 2	60.5%	18.8%	8.2%
2 to 3	35.4%	40.0%	22.2%
>3	0.6%	38.3%	67.8%

a/ The graph displays the probability distribution and its most likely path on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60%, and 90% probability around the central forecast (mode), using a combination of densities from the Patacon and 4GM models.
b/ The probability distribution is derived from the forecasting exercise of the October report.
Sources: DANE, calculations and projections by *Banco de la República.*

Graph 2.25
Output gap, predictive density[a/, b/]
(four-quarter cumulative)

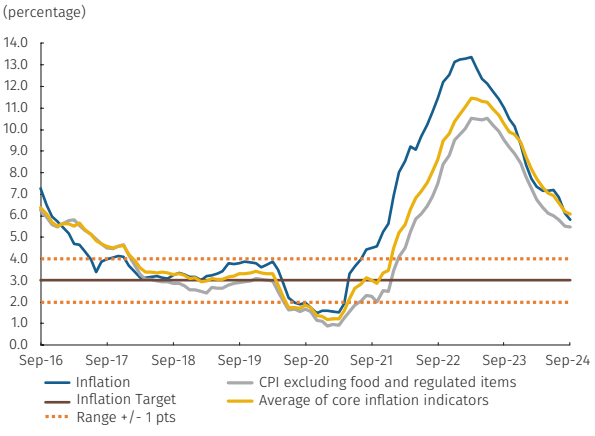


	4Q 2024	4Q 2025	3Q 2026
Mode	-0.5	-0.3	0.4
< Mode	52%	56%	59%
	Intervals		
<-2	0.1%	10.2%	5.0%
2 to 0	84.9%	56.1%	41.3%
0 to 2	14.8%	31.5%	45.3%
>2	0.2%	2.2%	8.4%

a/ The graph displays the probability distribution and its most likely path on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60%, and 90% probability around the central forecast (mode), using a combination of densities from the Patacon and 4GM models.
b/ The probability distribution is derived from the forecasting exercise of the October report.
Sources: DANE, calculations and projections by *Banco de la República.*

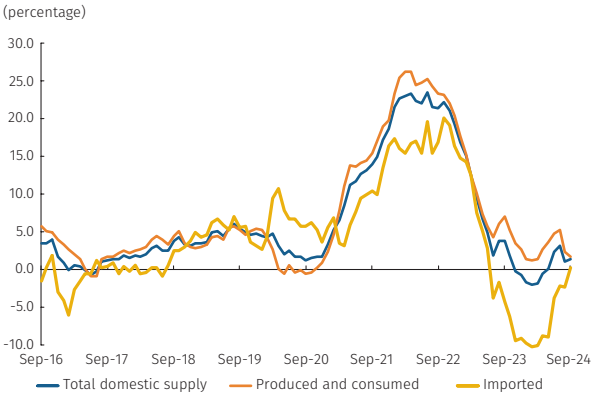
3. Current economic situation

Graph 3.1
CPI and core inflation indicators
(annual change)



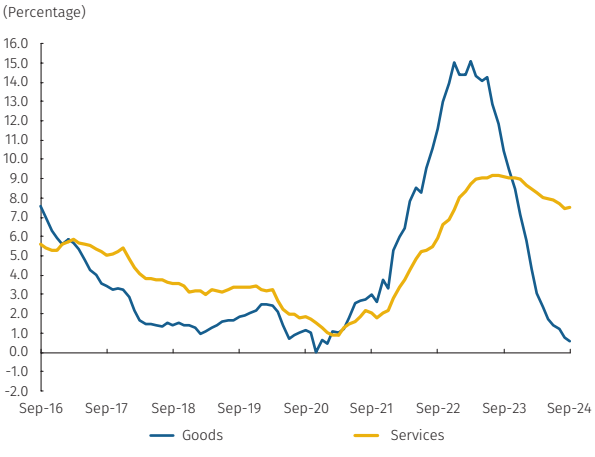
Sources: DANE, *Banco de la República*.

Graph 3.2
PPI by origin
(annual change)



Sources: DANE, calculations by *Banco de la República*.

Graph 3.3
CPI for goods and services, excluding food and regulated items
(annual change)



Sources: DANE, calculations by *Banco de la República*.

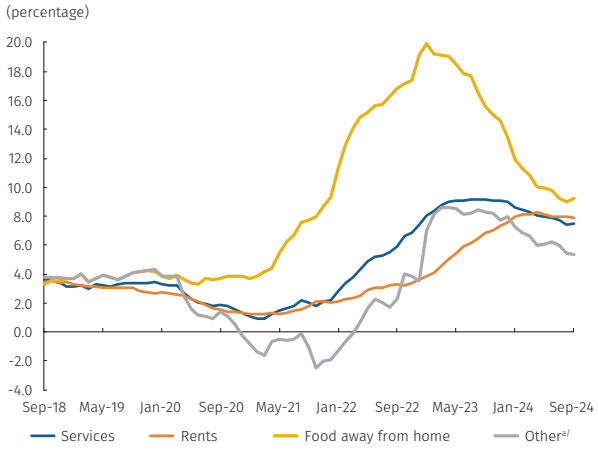
3.1 Inflation and price behavior

The annual consumer inflation rate resumed a downward trajectory in the third quarter, which was steeper than anticipated. Annual inflation closed the third quarter at 5.8%, lower than the June (7.2%) and March (7.4%) figures (Graph 3.1). All the principal baskets of the consumer price index (CPI) recorded decreases in their annual variations, with the food and regulated items baskets registering the largest reductions. The decline in headline inflation, which began in the second quarter of 2023, consistently exceeded market expectations. Likewise, core inflation, excluding food and regulated items, steadily fell in recent months. The downward trend experienced by consumer inflation can be attributed to the contractionary monetary policy stance, the recovery of agricultural product supply, and lower exchange rate and cost pressures, both domestic and external. The latter was mirrored by the domestic supply producer price index (PPI), whose annual change narrowed from 2.3% in June to 1.2% in September (Graph 3.2).[1] Nevertheless, despite the drop in headline and core inflation in recent quarters, both indicators remain above the 3% target. This is partly explained by high indexation rates that mostly impact services and - to a lesser extent - regulated items. This was accompanied by price pressures originating from the aforementioned regulated services segment of the CPI, which, despite having improved, continued to adjust at double-digit annual rates. These factors continue to limit a more significant drop in Colombia's inflation and help explain why it remains above the levels of its regional peers, who have seen a more significant decrease.

Core inflation fell as expected but remained significantly above goal due to the high inflationary inertia witnessed in services. In September, core inflation (excluding food and regulated items) was 5.5%, down from 6.0% in June (Graph 3.3). The CPI services basket experienced a small annual decline in the third quarter, going from 7.9% in June to 7.5% in September. The continuation of significant adjustments in service prices is mostly explained by the behavior of rents, which are strongly indexed to prior yearend inflation and had an annual change of close to 8% during the third quarter (Graph 3.4). Beyond indexation, the slowing of new supply has placed upward pressure on this item (see Box 1). Food away from home prices remained consistently high (9.3% in September), with a slight decrease in the third quarter. The significant price increases are explained by the rising pressure exerted by utility rates

1 Provisional annual producer inflation for September supplied by DANE.

Graph 3.4
CPI for services, excluding food and regulated items and its components (annual change)



a/ This group primarily consists of communication, recreation, and cultural services; education (non-regulated); miscellaneous services (beauty salons, childcare, financial, etc.); transportation; building administration fees; domestic services; night clubs and hotels; healthcare; and laundry and dry-cleaning services.
Sources: DANE, calculations by *Banco de la República*.

and wages, among other factors. In contrast, the price adjustment in the "other"[2] subgroup was less noticeable between June and September, which can be attributed to price decreases in items such as tourism packages, airline tickets, television cable subscriptions, and auto insurance thus far this year.

At the end of the third quarter, goods continued to experience the lowest annual price adjustment rate among the larger CPI segments. The annual change of this sub-basket fell between June (1.4%) and September (0.6%) (Graph 3.3). This performance was partly due to a still weak local demand, and consistent with the downward trend enjoyed by this CPI segment in the United States and some countries in the region, attributed to lower production and input cost pressures as the pandemic and post-pandemic logistics crisis and the supply chain disruptions eased. Similarly, disinflationary exchange rate pressures continued to contribute to a reduction in the annual change experienced by basic goods.

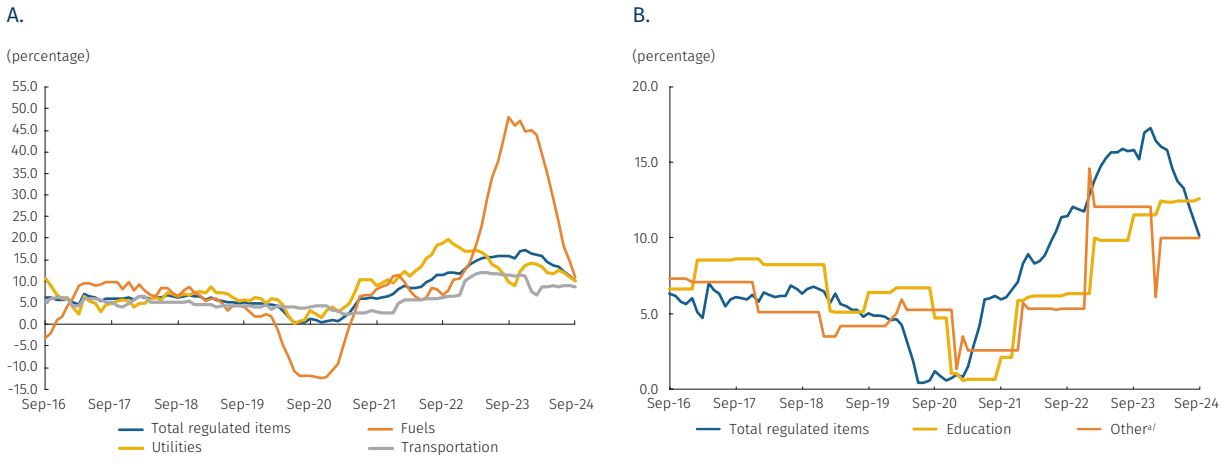
During this period there was also a significant drop in the year-on-year variation of regulated items, mainly resulting from favorable energy rates and fuel price performances. The annual regulated price change lessened between June (13.3%) and September (10.2%), mostly due to lower annual adjustments in fuel prices (Graph 3.5, Panel A), as a result of a favorable statistical base for comparison because of the high increases seen last year. Nevertheless, the recent price adjustment of ACPM[3] did not place significant inflationary pressures on the total CPI given its small share of the consumer basket. However, public utilities contributed to the decrease in regulated prices, especially electricity, due to the recent rate decrease, principally in Bogotá. The remaining components that comprise the regulated sub-basket (transportation, education, and others) did not exhibit any significant changes in their annual price variations between June and September, although they continue to show higher adjustment rates than headline inflation (Graph 3.5, Panel B).

The annual changes seen in food fell significantly in the third quarter due to favorable behavior in the prices of perishable products. Food prices decelerated during the third quarter,

2 This group comprises the following items: communication services, recreation, and culture; education (non-regulated) sundry services (hairdressing, childcare, financial, etc.); transport; property management; household domestic personnel expenses, nightclubs, and hotels; health; and laundry services.

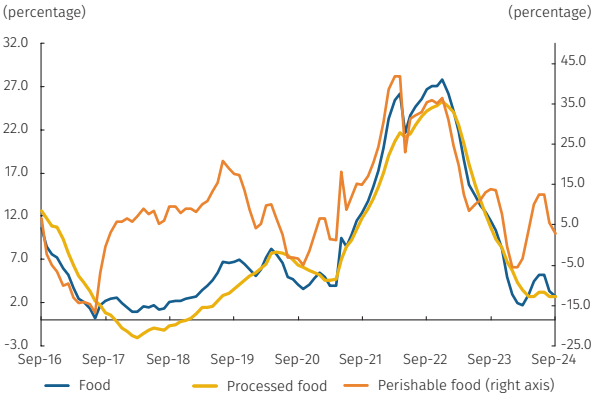
3 In response to the truckers' strike at the beginning of September, the agreed price adjustment of ACPM (similar to diesel) was COP 400 for September, followed by another COP 400 increase in early December.

Graph 3.5
CPI for regulated items and its components
(annual change)



a/ Includes EPS affiliate co-payments, administrative certificates and documents, and professional fee payments.
Sources: DANE, calculations by *Banco de la República.*

Graph 3.6
CPI for food and its components
(annual change)

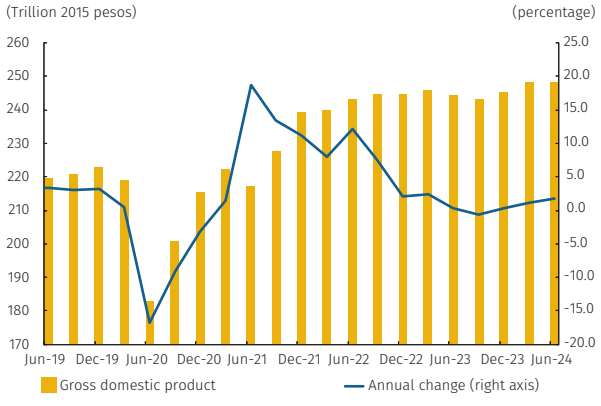


Sources: DANE, calculations by *Banco de la República.*

and their annual change stood at 2.7% in September versus the 5.3% seen in June (Graph 3.6). This performance was led by the annual perishable food adjustment, which registered a substantial drop between June (12.5%) and September (2.9%). The annual decline seen in processed foods was smaller (from 3.2% to 2.7%), but also contributed to the fall in annual food price adjustments. For perishables, the lower price adjustment was explained by a favorable harvest cycle (except for some fruits), which resulted in an increase in the available food supply with lower prices. The truckers' strike, which occurred between September 2 and 6, did not significantly affect the CPI results for this food segment, as its immediate consequences were quickly offset in the same month. There were more limited price adjustments in the processed food subgroup because most of the high sugar and fat content[4] foods, such as chocolate and its derivatives, confectionery products, soft drink concentrate, gelatins, and related products, have been registering steep price increases surpassing 30% year-to-date. The opposite is true regarding cereals, oils, and animal proteins, which have shown negative or very low annual growth, thus offsetting the upward adjustments in foods that are subject to the so-called "healthy tax", which seeks to reduce the consumption of processed foods rich in sugars and fats.

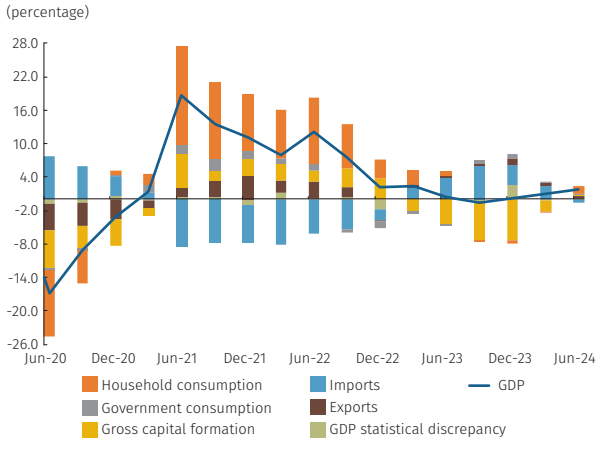
4 Title V of Law 2277 of 2022, titled "Healthy Taxes", imposed taxes on ultra-processed sweetened beverages and ultra-processed food products that are industrially processed and/or have a high content of added sugars, sodium, or saturated fats.

Graph 3.7
Gross Domestic Product[a/]
(quarterly and annual change)



a/ Seasonally adjusted and corrected for calendar effects.
Sources: DANE, calculations by *Banco de la República*.

Graph 3.8
Contributions to annual changes to quarterly GDP[a/]
(annual change, contribution)



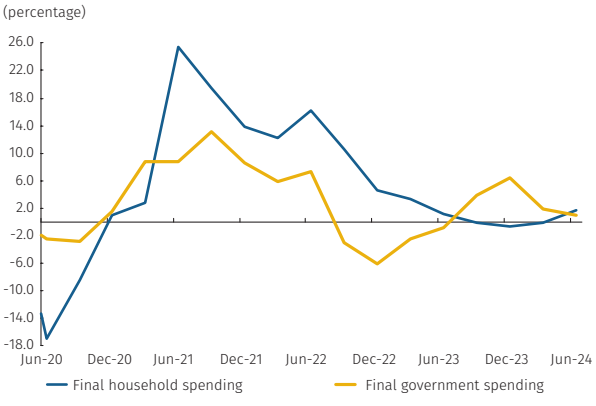
a/ Seasonally adjusted and corrected for calendar effects
Sources: DANE, calculations by *Banco de la República*.

3.2 Growth and domestic demand

The Colombian economy continued to show signs of a gradual recovery during the second quarter, with faster annual growth consistent with expectations. During the second quarter of 2024, economic activity registered 1.8% annual and 0.4% annualized quarterly expansion rates, according to DANE's seasonally adjusted figures corrected for calendar effects. This result denoted improved annual growth levels (Graph 3.7) compared to those seen since yearend 2023, in line with the technical staff's forecasts in the previous Report. On the expenditure side, domestic demand grew due to the increase in private consumption. In contrast, net external demand was negative as imports outpaced exports. The recovery in domestic demand observed since the end of 2023 occurred in an environment of a less tight monetary policy, improvement in household disposable income, a lower financial burden, and more favorable confidence indicators compared to the end of the previous year. The supply-side performance continued to be heterogeneous, with the primary and tertiary branches contributing most to annual growth during the second quarter, mostly through the favorable performance of the agricultural sector, arts and entertainment activities, and public administration, health, and education services.

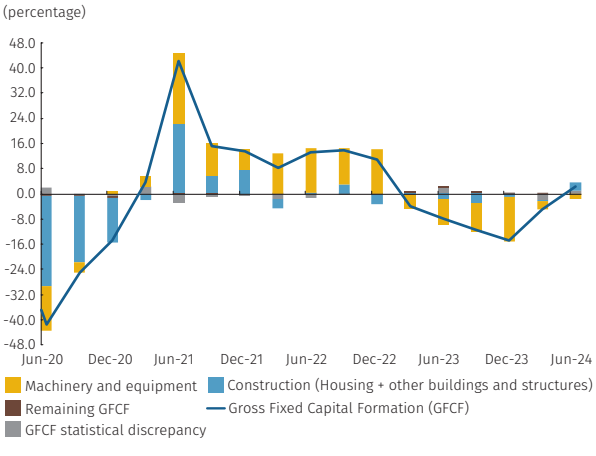
After several quarters of adjustments, domestic demand exhibited an annual increase, chiefly driven by consumption. The annual domestic absorption increase during the second quarter (1.6%) was the first seen after five consecutive quarters of declines and showed an annualized quarterly increase of 6.2% versus the first quarter. By components, the greatest driver of the increase in this aggregate was private consumption (Graph 3.8), which surpassed expectations in both annual (1.7%) and quarterly terms (5.5% quarterly annualized). Consequently, this expenditure component grew 21.7% above its pre-pandemic value. Non-durable goods consumption was the most dynamic segment, exhibiting significant quarterly growth that coincided with an outstanding performance by the agricultural sector. Durable and semi-durable consumption also grew at the margin after several quarters of declines. Finally, services consumption continued to grow both annually and quarterly, in line with expectations, led by spending on leisure, lodging, and food services. The favorable performance of household consumption in the first semester occurred against a backdrop of interest rate reductions, stable loan disbursements, a lessening of the financial burden, and improvements in employment and remittances from abroad. Additionally, public consumption grew versus the first quarter and year-on-year, although at a lesser rate than that experienced at the beginning of the year (Graph 3.9). This increase is explained by the retroactive payment of civil servants' salaries that did not

Graph 3.9
Final household and general government spending[a/]
(annual change)



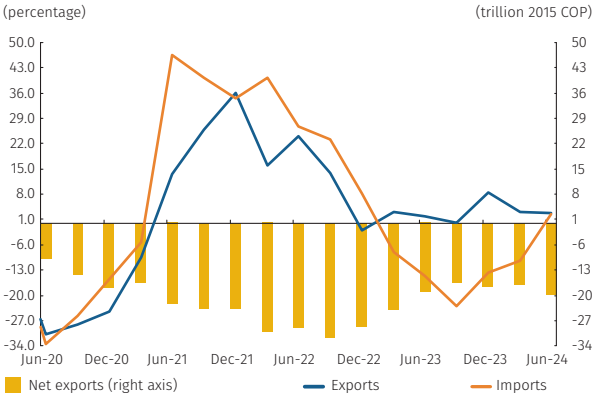
a/ Seasonally adjusted and corrected for calendar effects.
Sources: DANE, calculations by *Banco de la República*.

Graph 3.10
Quarterly gross fixed capital formation[a/]
(annual change, contributions)



a/ Seasonally adjusted and corrected for calendar effects
Sources: DANE, calculations by *Banco de la República*.

Graph 3.11
Exports, imports, and trade balance[a/]
(annual change and trillion 2015 COP)



a/ Seasonally adjusted and corrected for calendar effects.
Sources: DANE, calculations by *Banco de la República*.

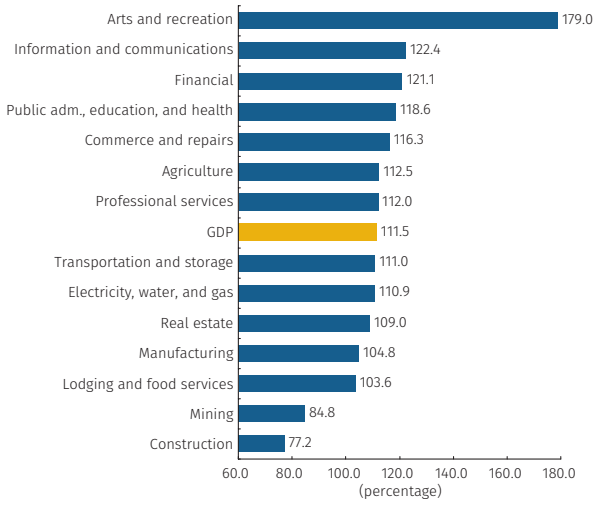
happen during the first quarter and hiring increases in some sectors.

Investment continued at relatively low levels in the second quarter yet showed positive annual and quarterly growth for the first time since the beginning of 2023. As a result, both total and fixed gross capital formation began to contribute positively to annual GDP growth. Nevertheless, the former continues to be affected by a negative and high-value statistical discrepancy and inventory variation component, a situation that has been present for the past several quarters. Among the major investment elements, the only one that grew on a quarter basis was other buildings and structures, which especially benefited from growth in civil work construction and, to a lesser extent, the completion of some non-residential buildings. Since the end of last year, the latter component has shown a gradual, albeit slow, recovery, allowing it to expand annually in recent quarters (Graph 3.10). Housing investment levels continued unchanged since the first quarter yet fell slightly in annual terms. Finally, investment in machinery and equipment fell in the second quarter versus the first quarter and year-on-year, due to lower imports of transportation equipment.

Exports continued to support growth while imports recovered in line with domestic demand growth. During the second quarter, exports showed year-on-year and quarter-on-quarter moderate increases, primarily attributed to increased sales abroad primarily of coffee, coal, oil, and services – the latter favored by non-resident tourism. On the other hand, imports showed a significant increase in the margin, surpassing extensively that of exports. In fact, imports grew annually after over a year of declines, a behavior consistent with the recovery of domestic demand and centered mostly on fuels and pharmaceutical products. However, capital goods imports fell, in line with the fall in investment in machinery and equipment. Consequently, the external deficit in constant pesos was higher than in the first quarter and in the previous year (Graph 3.11), contributing negatively to the annual change in the GDP.

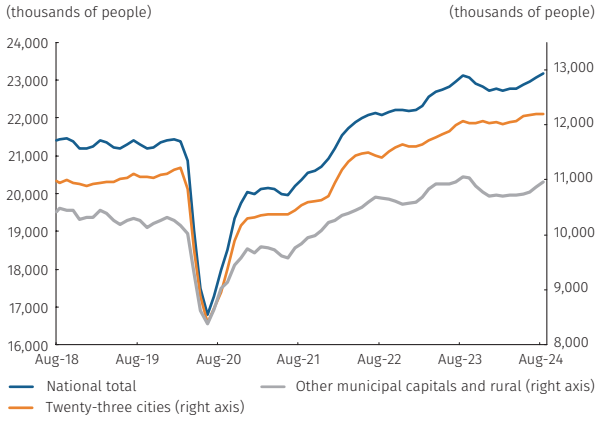
In the second quarter, the growth in GDP continued to be driven by agriculture, public administration and defense, arts and entertainment, and civil works construction. During this period, GDP expansion was propelled by the primary and tertiary sectors, which recorded annual growth of 3.7% and 2.2%, respectively. These activities were advantaged by positive dynamics in the agricultural sector, with favorable outcomes for crops, especially coffee, and livestock. Concurrently, other positive performers were artistic and entertainment activities, as online gaming and sports betting continue their boom, and in public administration, healthcare, and education services. Within the primary branches, there was a significant decline

Graph 3.12
Sectoral value-added levels in 2Q 2024 relative to 4Q 2019 a/
(4Q 2019 = 100%)



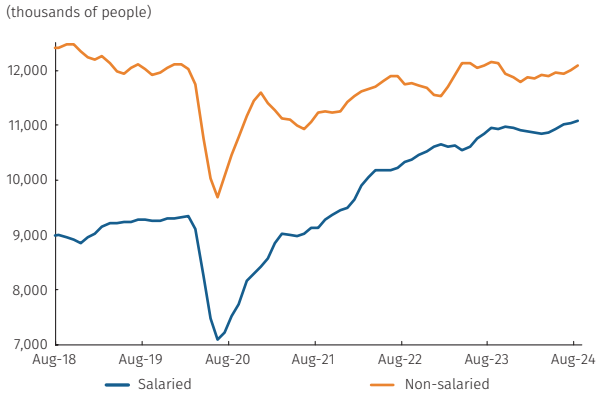
a/ Seasonally adjusted and corrected for calendar effects.
Sources: DANE, calculations by *Banco de la República.*

Graph 3.13
Employed population by location



Note: Corresponds to rolling quarterly seasonally adjusted data.
Sources: DANE (GEIH), calculations by *Banco de la República.*

Graph 3.14
Jobs by type of employment
(national total)



Note: Corresponds to rolling quarterly seasonally adjusted data.
Sources: DANE (GEIH), calculations by *Banco de la República.*

in mining activities (-3.3% annually), attributed to lower production of coal and metalliferous minerals, and a weakening expansion in oil production. Consequently, this sector continues to present a much lower value-added than seen in the pre-pandemic period (Graph 3.12). The secondary branches completed a year of annual declines (-1.7% annually in the second quarter), as the manufacturing industry converges to levels more consistent with its historical trend, and lower than those recorded a year ago. The construction sector showed an annual growth of 1.8% with improvements in civil works construction as some regional projects showed progress, despite continuing low dynamism in residential and non-residential construction.

3.3. Labor Market [5,6]

National aggregate employment figures recovered during the past several months after the relative stagnancy seen in the first half of the year. For the rolling quarter ending in August, the results of the Integrated Household Survey (GEIH for its acronym in Spanish) showed an increase in employment levels in the twenty-three main cities as well as in the other municipal capitals and rural areas (Graph 3.13). Accordingly, for this period, national aggregate[7] employment registered a quarterly increase (1.2%), led by employment growth in both rural (2.2%) and urban (0.4%) areas. Quarter-on-quarter employment growth was seen in several sectors, with transportation and communications, recreation and other services, and manufacturing the most prevalent contributors to the national aggregate.

The salaried segment was the primary driver of employment growth by job type. According to rolling quarter data, salaried employment registered a quarterly increase of 1.4% in August after the decreases observed in the first half of the year (Graph 3.14). In annual terms, gains of 1.0% were recorded in this labor segment, with private employees being the group that contributed most towards these results. Other sources of information regarding formal salaried employment, including pension contributions to the Comprehensive Contribution Settlement System (PILA for its Spanish acronym) and the records of affiliates to family compensation funds (CCF for

5 For a more detailed analysis of the labor market, we invite you to consult *Banco de la República*'s Labor Market Report, available only in Spanish at https://www.banrep.gov.co/es/reporte-mercado-laboral

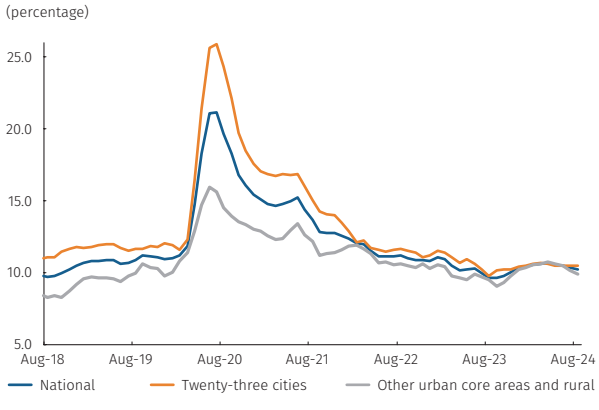
6 Labor market figures presented in this section of the Report primarily correspond to the rolling quarter ending May 2024.

7 Consistent with employment behavior, the national aggregate employment rate has increased in the past months to 57.6%. In annual terms, the employment rate fell by -0.7 pts.

its Spanish acronym), corroborate the leveling off of the previous decline. Meanwhile, the non-salaried segment rebounded in the past few months, consistent with the employment improvements in the other municipal capitals and rural areas.[8] Hence, improvements in salaried employment, largely driven by formal employment, cut short the upward trend of informal employment in the national aggregate, which dropped to 56.1% in August.

The national aggregate unemployment rate remained relatively unchanged, with values below the historical average and some decrease at the margin in recent months. For the rolling quarter to August and drawing on seasonally adjusted data, the national unemployment rate stood at 10.2%, a figure that has largely remained unchanged since yearend 2023, though slightly lower than that recorded in July (10.3%). Likewise, the urban unemployment rate (10.4%) did not vary significantly, while the unemployment rate in other urban core and rural areas decreased to 9.9% (Graph 3.15). The marked heterogeneity of the unemployment rate among the twenty-three main cities stands out, with Quibdó experiencing the highest unemployment (26.1%), and Medellín the lowest (8.3%). Compared to the previous quarter, a slight reduction in the unemployment rate was observed in most cities, with Quibdó (-2.6 pts), Ríohacha (-1.9 pts), and Florencia (-1.2 pts) displaying the largest drops; however, Pereira (2.1 pts), Barranquilla (1.2 pts) and Villavicencio (0.7 pts) did report increases. As for the unemployment gap by gender, after the reduction noted in May, it climbed back up in recent months and stood at 4.5 pts in August as a result of a decrease in the unemployment rate for men.

Graph 3.15
Unemployment rate by location



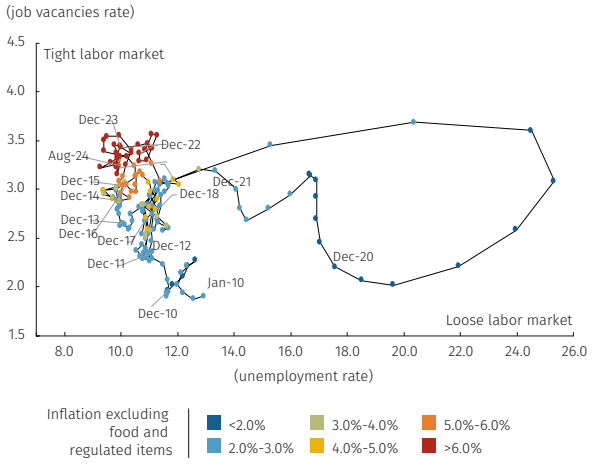
Note: Corresponds to rolling quarter seasonally adjusted data.
Sources: DANE (GEIH), calculations by *Banco de la República*.

Despite the mixed signals stemming from hiring expectations and labor demand indicators, no drastic movements in the unemployment rate are expected in the coming months. Rather, a tight labor market is expected to continue in the short term. Hiring expectations, provided by *Banco de la República's* quarterly Survey of Economic Expectations (ETE for its Spanish acronym), fell sharply and registered a negative balance[9] versus the first quarter of the year, suggesting lower activity for formal job formation in the near future. On the contrary, ManpowerGroup's Survey of Hiring Expectations continued to show positive results and an upward trajectory. Meanwhile, job vacancy rates, obtained as of July from classified ads and the Public Employment Service (SPE for its Spanish acronym) remained unchanged in the past months, while those derived from implicit GEIH hiring figures showed impro-

8 In annual terms, the non-salaried informal labor segment continues to display a negative trend (-0.6%).

9 In the second quarter of 2024, economic expectations dropped by 13.1 pts from the previous quarter, in the balance between those who plan to increase and decrease headcount in the short term.

Graph 3.16
Beveridge curve for the seven largest cities



Notes: Rolling quarter seasonally adjusted data. GEIH's vacancy rate is estimated based on hires according to Morales, Hermida, and Dávalos' methodology (2019)
Sources: DANE (GEIH), calculations by *Banco de la República.*

Table 3.1
Interest rates
(monthly average, percentage)

	Dec 21	Dec 22	Dec 23	Mar 24	Jun-24	Sep-24
Interbank						
Interbank policy rate	2.68	11.42	13.18	12.69	11.75	10.75
Interbank overnight	2.73	11.41	13.13	12.68	11.75	10.75
BBI overnight	2.72	11.41	13.13	12.68	11.75	10.75
BBI 1-month	2.96	11.80	13.10	12.44	11.47	10.44
BBI 3-months	3.36	12.08	12.81	12.02	11.01	9.94
BBI 6-months	3.97	12.31	12.35	11.39	10.49	9.35
BBI 12-months	-	12.17	11.17	10.11	9.65	8.35
Deposits						
Savings	1.19	5.72	6.23	5.88	5.36	4.92
DTF 90-days	3.08	13.42	12.63	10.85	10.14	9.68
CDT* 180-days	3.71	15.58	12.90	10.87	10.33	9.94
CDT 360-days	5.10	17.08	13.19	10.88	10.75	9.86
CDT > 360-days	7.14	19.15	12.71	11.15	11.32	10.35
Credit						
Preferential	6.00	18.57	17.05	14.79	13.65	12.69
Ordinary	8.18	19.27	17.93	16.56	15.66	14.73
Non-public (non-VIS) housing purchases	9.40	17.22	17.06	15.93	14.71	12.04
Public housing purchases	11.55	17.00	15.41	14.23	13.42	12.25
Consumer personal loan	17.51	31.23	28.16	26.32	24.73	23.33
Consumer payroll loan	11.65	19.45	19.83	18.71	18.14	17.54
Credit card	24.47	39.01	34.70	31.10	29.22	27.24

* CDT (term deposit certificates).
Sources: Financial Superintendency of Colombia; calculations by *Banco de la República.*

ved performance at the margin, consistent with the observations regarding salaried formal employment. By geography, the urban unemployment rate and job vacancy rate provided by the Beveridge curve[10] (Graph 3.16), suggest a certain tightness in the labor market given that the unemployment rate continued to decline, and the vacancy rate remains high. Although mixed signals increase uncertainty about the future course of the labor market, no drastic increases in the unemployment rate are expected in the coming months. Consequently, the labor market is expected to remain relatively tight in the short term. Finally, with data as of August, the national aggregate real job income for non-salaried earners has increased, with an annual growth rate of 2.4%, while that of the salaried earners has remained relatively stable.

3.4 Financial and Monetary Market

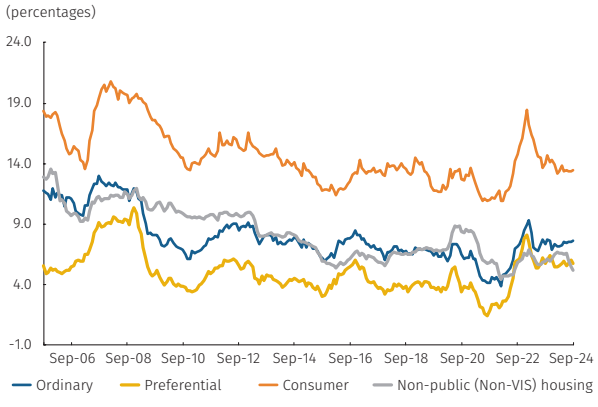
During the third quarter of 2024, the loan portfolio proceeded to grow at low annual rates amid interest rates that continued to decline and steadying risk indicators. This behavior occurs in an environment of gradually recovering economic activity, particularly domestic demand, a less restrictive monetary policy, decreasing market interest rates, and expectations of additional reductions in the benchmark rate (MPR). On the supply side, risk indicators stabilized but remained high, and credit institutions still registered low profits and stringent requirements for granting new loans, although less restrictive for certain categories. These factors could improve in the short term and, together with the gradual recovery of domestic demand and the transference of monetary policy decisions, could lead to greater credit activity in the future.

The MPR reductions continue to carry over to market interest rates, especially commercial, credit card, and mortgage rates; concurrently, inflation expectations continue to fall and credit availability remains weak. During the third quarter, the Board of Directors of *Banco de la República* (BDBR) continued reducing the benchmark rate, with cuts of 50 basis points (bps) in its July and September meetings, for a cumulative total of a 300-basis point decrease since the end of 2023. This downward trajectory continued to be mirrored on a similar scale by the money market interest rates between June and September, particularly the interbank rate (TIB for its Spanish acronym) and overnight and one-month benchmark banking indicators (BBI) (Table 3.1). The BBIs for longer maturities also continued to decrease at a greater ratio than the MPR, suggesting that expectations of additional cuts in the coming months for the

10 The Beveridge curve is a graphical representation of the relationship between unemployment and the job vacancy rate.

latter continue, while inflation also maintained its downward trend. Likewise, deposit interest rates for all maturities continued to fall, although at a lesser pace than the MPR for maturities under one year. Simultaneously, demand deposits recorded higher annual growth than time deposits, which continued to slow in the third quarter. Placement interest rates sustained a marked downward trend for most types of loans, particularly mortgages, consumer loans, and credit cards, while the non-performing loan portfolio risk stabilized. The fall in loan interest rates continues to reflect the lower cost of funding, the financial system's greater preference for granting loans to lower-risk agents, and a still-weak demand for credit. In real terms, placement interest rates continue unchanged and above their 10-year averages for most loan types, except credit cards and mortgages. The latter particularly in the non-public housing segment (non-VIS) which fell and is already below its 10-year average (Graph 3.17). This monetary policy transmission continued to take place in an environment of low observed and expected inflation, a loan portfolio with little growth, and a reduction in the interest rate spreads of some loan categories vis-à-vis public debt securities (TES for its Spanish acronym).

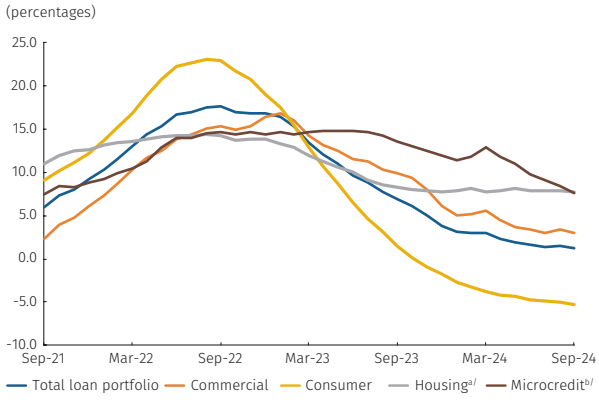
Graph 3.17
Real loan interest rates
(monthly average data deflated by the CPI excluding food)



Sources: Financial Superintendency of Colombia, calculations by *Banco de la República.*

The loan portfolio remained at similar levels to those observed since the beginning of the year. Likewise, these continue to be mixed signals surrounding loan demand recovery with the willingness to lend limited by high risk levels and real interest rates that continue high for some loan categories. During the third quarter, credit continued to decelerate in annual terms, growing at rates below 2% (Graph 3.18) and continuing at the levels seen since the beginning of the year, with additional real contractions in the non-performing loan portfolio. Nevertheless, the behavior of the various loan types differed, with a pronounced annual decrease seen in all consumer loans during September (-5.3%), and unspecified-use loans registering the greatest setback. Micro-credit continued to slow in the third quarter but grew year-on-year by over 7%. Commercial and housing loans showed some improvement at the margin, partially offsetting the decrease in consumer loans. In real terms, consumer and commercial loans continued to register annual declines, but at slightly lower rates than those observed in the previous quarter, while housing loans grew and, together with microcredit, registered positive growth percentages. Real interest rates remain high for some loan categories, and the prospect of default risks in some sectors is contributing to reducing loan demand. Nevertheless, the gradual recovery of domestic demand, the transmission of monetary policy interest rate reductions to market rates, and the slight improvement in household confidence have contributed to stabilizing the performance of the overall credit sector, which should show incremental improvements in the coming quarters. For their part, banks maintained their exigent

Graph 3.18
Gross loan portfolio in Colombian pesos
(annual change, monthly averages)

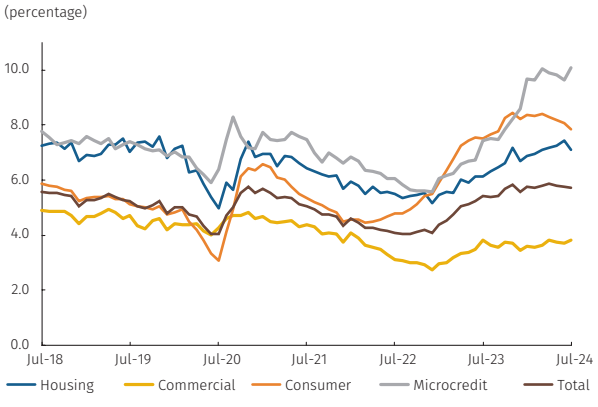


a/ Adjusted housing: bank loan portfolio plus securitizations.
b/ Microcredit as of 01 March 2024 includes "Banco Contactar", entity that had previously operated as "Corporación de Crédito Contactar" under the oversight of the Superintendency of Corporate Affairs.
Sources: Financial Superintendency of Colombia, calculations by *Banco de la República.*

requirements for granting new loans in all categories,[11] though less restrictive for consumers and housing. Meanwhile, profits of credit institutions remain weak, risk levels - although stabilized - continue high, and investments represent a growing share of the assets of these institutions, which together could be contributing towards limiting the growth of the credit supply.

Despite the low growth of the loan portfolio, the Colombian financial system continues to record adequate capital levels above the regulatory minimums. In July 2024, cumulative twelve-month profits of credit institutions stood at COP 7.4 trillion (t), continuing relatively unchanged at levels observed in the first quarter of the year; nonetheless, they continue to contract in annual terms (-28%). The profitability of the financial system remains affected mainly by increased levels of provisions due to the greater materialization of credit risk, and weak intermediation activity. The non-performing loans indicator continues high, although it has stabilized so far this year, showing some improvement at the margin (Graph 3.19). The latter can be attributed to lower growth in delinquent consumer loans, while some segments of the housing and commercial portfolios showed signs of more pronounced deterioration. Nevertheless, credit institutions in Colombia have adequate capital levels and the resiliency to face asset-related risks. According to the data as of July, the total (18.2%) and basic (14.8%) solvency levels of credit institutions remained relatively stable and are well above the regulatory minimums (9.0% and 4.5%, respectively).

Graph 3.19
NPL Indicator
(Past due loan portfolio / Total loan portfolio)



Sources: Financial Superintendency of Colombia, calculations by *Banco de la República.*

11 See the results of the Quarterly Survey of Credit Institutions in Colombia for the second quarter of 2024.

Box 1
The recent behavior of the rent CPI in Colombia

Julián Cardenas
Nicol Rodríguez*

Rent is the most important CPI component for Colombian households, representing approximately one-fourth of the household's index expenditures. Price increases for this component exhibit significant inertia because they are indexed to the headline inflation of the prior year. In turn, this introduces a greater persistence to inflationary phenomena, slows down the convergence of inflation to the target and, consequently, could result in higher costs of monetary policy actions concerning economic activity.[1]

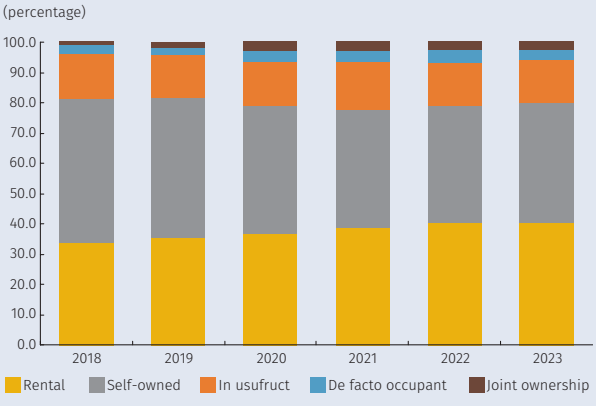
In recent years, the rent CPI has shown high yearly adjustments, followed by a slow deceleration of these prices. In September 2024, year-on-year change was 7.9% for this measure, amid a backdrop of high headline inflation indexation (well above 3%), the reversal of some temporary rent relief measures adopted during the pandemic,[2] and a stagnant new and used housing market, among other factors. The combined effect of the latter has placed upward pressure on rents, thus limiting the possibility for annual prices in the services basket to assume a downward trajectory and contributing to maintaining headline and core inflation at levels above the target.

This box describes the rental market in Colombia, its measurement relative to consumer prices and its recent behavior in light of the evolution of some of its determinants.

1. Housing rent in Colombia

Renting constitutes the foremost avenue for households in Colombia to access housing. According to DANE's Quality of Life Survey (ECV for its Spanish acronym), in 2023 around 40% of households lived in rented housing, being the segment with the highest share among the types of housing tenure and the one that has gained the most prevalence in recent years (Graph B1.1). In contrast, the share of households who own their primary residence has decreased, despite the higher number of households living under this type of tenure in 2022

Graph B1.1
Distribution of households by housing tenure type



Sources: DANE (ECV); own calculations.

* The authors are members of the Technical and Economic Information Department and the Programming and Inflation Department, respectively. The views and opinions expressed herein do not necessarily reflect those of the Bank or its Board of Directors

1 For a more detailed analysis of the effects of indexation in Colombia, see Box 2: "Economic effects of indexation and its prevalence in Colombia", of the July 2023 Report by the Board of Directors to Congress, available only in Spanish at: https://www.banrep.gov.co/es/publicacionesinvestigaciones/informe-junta-directiva-congreso/julio-2023.

2 Decree 579 of 2020 of Colombia's Ministry of Housing, City, and Territory established a series of temporary measures for rental contracts to address the crisis associated with the COVID-19 health emergency. These measures included suspending rent payment adjustments between April and June 2020 and extending rental agreements that were set to end during said period, among others.

and 2023 (Graph B1.1). In addition, around 90% of households living in rented housing fall in socioeconomic strata 1, 2, and 3, and more than half have an informal rental contract.[3]

Law 820 of 2003 regulates rental contracts in the national territory and establishes their requirements, obligations of the parties, and other significant features. Concerning housing rental rates, the law stipulates that the monthly rental may not exceed 1% of the commercial appraisal of the property, must be renewed each year, and the annual increase must not exceed headline inflation recorded at the end of the previous year. Consequently, under this legal framework, price increases in Colombia's residential rental market are often indexed to headline inflation at the conclusion of the prior year, particularly in the context of written formal contracts.

2. How is the residential rent CPI measured?

According to DANE, the rent CPI quantifies the fluctuations in the price of the residence reported by both renter and/or owner households. This component represents 25.2% of the total CPI basket and is especially significant for the low-income household segment, for whom its share is 31.6%.

The total rent basket includes two basic components, called effective rent and imputed rent. Effective rent is the price paid in rent during the rental period minus any applicable discounts or incentives, quantified through a survey given to residents of houses, apartments, and rooms for rent. Imputed rent quantifies the price of expenses associated with the services produced by owner-occupied housing, and is calculated exclusively based on the behavior of apartment and house rentals. Thus, imputed rent is not collected, so its total change is built from the variations for effective rent collected and weighted according to the magnitudes assigned to spending on owner-occupied housing services, in houses and apartments, by city and income level.[4]

The design for collecting rental prices through the CPI is based on a probabilistic sampling operation, in which dwellings are chosen through a selection performed by DANE of cartographic blocks, where the monitored unit is the residence, not the household or family, consistent with the recommendations of multiple international organizations.[5]

Finally, the data from each informant in the rental group is collected on a four-monthly basis;[6] that is, the total sample is divided into four groups and the rental fee information is collected monthly from only one of the groups. This implies that the entire sample of residences is used to construct the indicator, but only 25% would have new information and 75% would show no change from one month to another.[7]

---

3 Measures households reporting having a verbal rental contract.

4 These weights, derived from the National Household Budget Survey (ENPH for its Spanish acronym), are obtained from the rent equivalence framework. In this rent approach, rents of residences actually rented are taken as a measure of the cost of use. In this approach, a price is imputed to owner-occupied housing, which is equal to the rental price of equivalent housing in the same period.

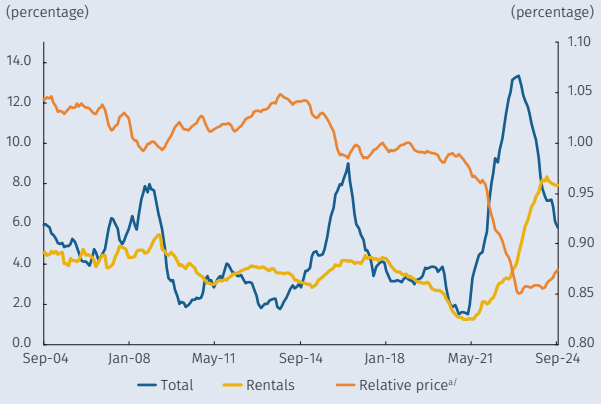
5 ILO, IMF, WB and OECD: *Consumer Price Index Manual: Theory and Practice*; International Monetary Fund's (IMF) *Data Quality Assessment Framework (DQAF)*; *Norma para el cálculo de un índice armonizado de precios al consumidor para los países miembros de la Comunidad Andina* (Standard for the Calculation of a Harmonized Consumer Price Index for the Member Countries of the Andean Community), and the *European Statistics Code of Practices* by Eurostat.

6 For example, it is assumed that the source is a private home that is visited in January, which, in this order of ideas, must be visited again in May, September, and January of the following year (four-monthly periodicity).

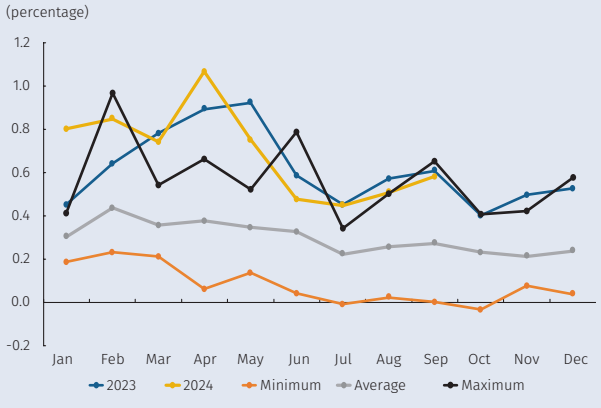
7 This implies changes to the data collected during the month were smoothed.

Graph B1.2
Headline and rent CPI

A. Annual changes and relative price

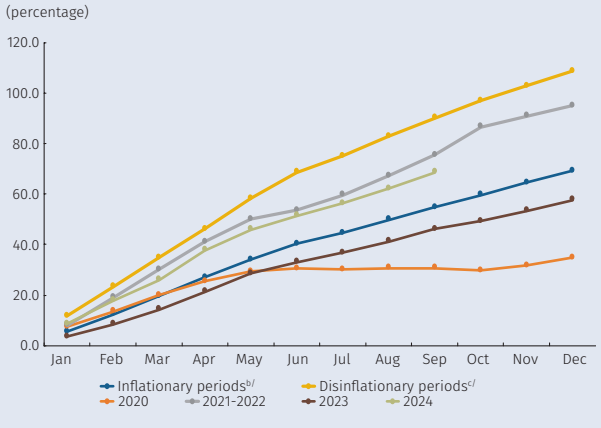


B. Monthly changes b/



a/ Rent CPI as a percentage of total CPI.
b/ Monthly minimum, average, and maximum rent CPI change calculations use data from 2004 to 2022.
Sources: DANE; own calculations.

Graph B1.3
Month-to-month transmission of headline inflation to the year-to-date rent CPI changes a/



a/ Transmission is understood as the coefficient between the year-to-date change of the rent CPI and headline inflation at the end of the immediately preceding year.
b/ Is the average transmission observed each month during the inflationary periods before Law 830 of 2003, including those of 2007-2008 and 2015-2016.
c/ Is the average transmission observed each month during the disinflationary periods before Law 830 of 2003, including those of 2009-2010 and 2017-2018.
Sources: DANE; own calculations.

3. Recent behavior of the rent CPI

Between 2020 and 2022, the rent CPI registered year-on-year adjustments of less than 4%[8] and consistently fell below the figures observed for headline inflation. This was reflected in a relative rental price that presented significant drops during this period (Graph B1.2, Panel A). This occurred in a context of prices indexed to relatively low levels of inflation[9] and transitory price assistance policies established by the National Government during the pandemic that remained in force. Moreover, aggregate demand remained weak during a good portion of that time, which would not only have generated downward pressure on prices but likewise limited the transmission of headline inflation to the annual change of the rent CPI. Likewise, the new home purchase market that reached historic highs during these years also would have placed downward pressure on the rent CPI and played a significant role in expanding the supply of residential real estate, helping to alleviate demand pressures in the rental segment. Finally, improvements were also recorded in the availability of used rental housing in the main cities for the upper socioeconomic strata.

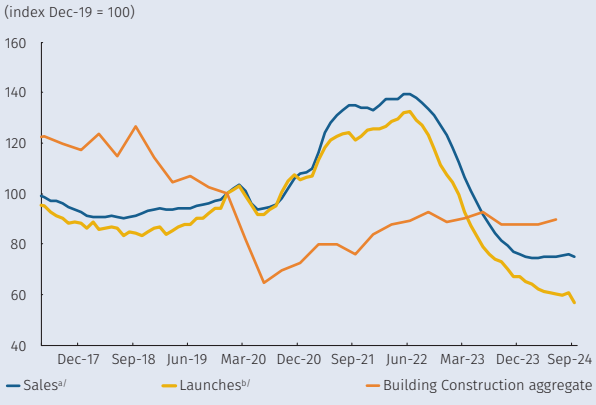
In recent years, rental prices have exhibited high annual growth and significant inflationary inertia, which has contributed to greater persistence of still-high adjustments above the 3% headline and core inflation. In particular, throughout 2023 and until the beginning of 2024, annual changes in the rent CPI rebounded, reaching 8.3% in April of this year, the highest of the past two decades. From that peak until September, the strong inertia exhibited by rent prices has restricted inflation's decline, maintaining annual adjustments in this segment at levels close to 8% (Graph B1.2, Panel A). Monthly variances in rents have systematically exceeded the average observed between 2004 and 2022 and, in some months, have registered new historical highs (Graph B1.2, Panel B). This, together with the fall of headline inflation, led to a stabilization of the relative price of rents, with some upsurges seen in recent months, and annual increases in the rent CPI that have exceeded those of the household goods and services basket since the beginning of this year (Graph B1.2, Panel A).

The recent behavior of the rent CPI would be associated with the dispelling of the factors that gave rise to the low annual variations of this indicator between 2020 and 2022. Primarily, the end of the price relief decreed during the COVID-19 health emergency could have triggered the growth of this basket segment as contract renewals took place. Then, within a setting of multiple inflationary shocks that drove inflation upwards in 2022 (13.1%) and 2023 (9.3%), price indexation mechanisms to these higher values would have driven higher rent adjustments over the past two years. Likewise, to date in 2024, there has been a significant pass-through of past headline inflation in the annual change of the rent CPI, consistent with behavior observed in past periods of disinflation (Graph B1.3). Furthermore, the observed decline in the relative price of rents in 2021 and 2022 partially accounts for the inertia in annual rent growth, with a gradual recovery of prices to long-term levels due to regulatory constraints on the magnitude of adjustments permitted in contract renewals.

8 In 2020, 2021, and 2022, the annual increase in the rent CPI was 1.3%, 2.0%, and 3.6%, respectively.

9 During this period, the benchmark indexation values were 3.8%, 1.6%, and 5.6%, consistent with headline inflation observed in the immediately preceding years.

Graph B1.4
Aggregate building construction and new housing market indicators

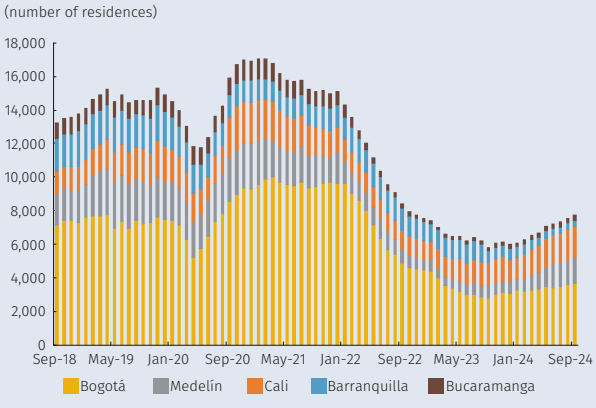


a/ 12-month aggregate of units sold in the market.
b/ 12-month aggregate of new units launched in the market.
Sources: DANE; own calculations.

Additional factors influencing the rent CPI concern the housing market. On the demand side, the recent correction in the housing purchase market, following a substantial increase in 2021 and 2022, may contribute to additional inflationary pressures on rents. In particular, lower demand for new housing (Graph B1.4) would reflect a restructuring in the preferences of the housing demand towards rents amid a backdrop where a substantial segment of Colombian families is requiring housing, coupled with an ongoing process of household formation.[10] On the supply side, significant and persistent drops in various new housing supply generation indicators (Graph B1.4) could be signs of limited housing availability in the rental market and inflationary supply pressures on rents. It is worth noting that the weak performance of the new housing market could be explained by several causes, including higher construction costs (materials and labor), uncertainty surrounding the subsidy policy, lower market incentives, and high financing costs. Finally, the used housing market in the main cities for the upper strata has also experienced limited availability of rental properties, especially in Bogotá, with levels that have fallen in the last two years to below those observed in 2019 (Graph B1.5). This is despite improvements in the margin observed in recent months.

To summarize, annual fluctuations in the rent CPI have predominantly been influenced by a significant degree of indexation to headline inflation rates well above the 3% target. This would have been exacerbated by further inflationary pressures originating from the new and used housing markets. In a situation where the possible determinants of rents have not exhibited any signs of improvement and where inflation - despite its recent decrease- continues exceeding the 3 percent target, the Consumer Price Index (CPI) for rents remains a source of upside risk for the inflation forecast for the remainder of 2024, as outlined in this Report. In the future, indexation to lower headline inflation and potential improvements in the housing market, significantly influenced by lower interest rates, would encourage more marked reductions in this segment of the services basket during the forecast period.

Graph B1.5
Available supply of used housing for rent in major cities in strata 4, 5, and 6



Sources: La Galería Inmobiliaria (real estate data analytics); own calculations.

10 According to DANE, in 2021, 31% of households in Colombia faced a housing deficit situation. This is equal to 5.2 million households requiring improved housing (qualitative deficit) or a new residence (quantitative deficit). In addition, forecasts of the 2018 National Population and Housing Census suggest that approximately 900,000 new households will be formed between 2023 and 2024.

Box 2
Inflation expectations and their degree of anchoring: what can be inferred from expectations obtained from Colombia's public debt market?

Jonathan Muñoz Martínez
Daniel Parra*

The global economy experienced a substantial rise in inflation in the aftermath of the COVID-19 pandemic and ensuing disruptions in the international supply chain, in addition to the impact on international energy prices resulting from the war between Russia and Ukraine. In emerging economies, this inflationary phenomenon coincided with a devaluation of their currencies, resulting in increased costs for imported goods. This elicited a significant monetary policy reaction on a worldwide scale. Over the past year, numerous economies have shown a reduction in inflation; yet, despite some converging towards long-term targets, their inflation expectations continue to surpass the objectives. The Colombian case is no exception.

Consequently, because inflation expectations are a critical input to the decision-making process of the Board of Directors of *Banco de la República* (BDBR), it is necessary to continuously monitor the indicators that signal the probable future trajectory of inflation. Various sources of information exist to measure or estimate inflation expectations for Colombia, including surveys of economic analysts[1] or measures derived from public debt markets. The latter compares different term structures between nominal TES (bonds issued by the Colombian government and managed by *Banco de la República*) and UVR-denominated TES (real value unit for its Spanish acronym). Additionally, for this analysis break-even inflation (BEI) and forward BEI (FBEI) rates were used (see Appendix B2.1) because, relative to the surveys, they offer different terms for study, offer a greater number of observations over time, and are for longer horizons (vs. one to two years for the surveys). In addition, *Banco de la República* has compiled daily information on the yield curve of public debt securities since 2003, which can also be used to obtain the market's inflation expectations.

At the international level, inflation expectations and their degree of anchoring are evaluated by monitoring: 1) deviation from a specific target level, 2) uncertainty and distribution, and 3) the pass-through of short-term expectations changes to medium and long-term expectations. In the next three sections, we provide some sample events and econometric models that provide insight into the degree of anchoring.[2]

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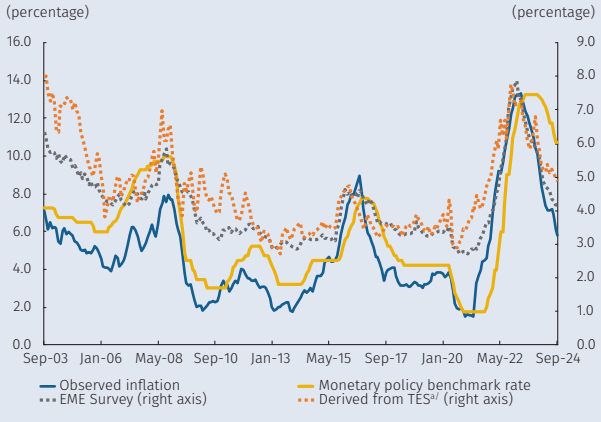
* The authors are researchers and members of the Macroeconomic Modelling Department. The views and opinions expressed herein do not necessarily reflect those of the Bank or its Board of Directors

1 For example, in Colombia there are the Monthly Survey of Economic Analyst Expectations (EME for its Spanish acronym) and the Quarterly Survey of Economic Expectations (ETE), both conducted by *Banco de la República.*

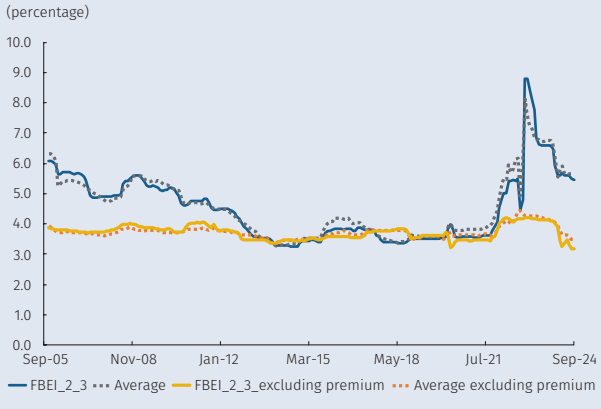
2 Economic literature has stressed the relevance of the degree of expectation anchoring to improve the ability of central banks to control inflation, along with the possibility of assessing the credibility of monetary policy (e.g., Haubrich et al., 2012; Autrup and Grothe, 2014; Strohsal et al., 2016).

Graph B2.1
Inflation expectations, observed inflation, and monetary policy interest rate



a/ The average 1- to 10-year BEI and FBEI (i, j) are computed where i = 1, 2, ... ,5 and j = 1, 2, ... , 5.
Sources: DANE; *Banco de la República*; own calculations.

Graph B2.2
Anchor perceived by the market ($\bar{\pi}_s^e$)a/



a/ The anchor averages are computed, considering the FBEI (i, j), where i = 1, 2, ... ,5 and j = 1, 2, ... , 5.
Sources: *Banco de la República*; own calculations.

For the exercises carried out, we 1) estimated a 250-day (one-year) rolling window, 2) conducted estimates for each term and component of the BEI and FBEI, and 3) averaged and standardized the results[3] to measure the anchoring perception between zero and one (Graphs B2.2, B2.3 and B2.6), where a value close to zero indicates a higher degree of anchoring.

1. Level

Any economy that faces shocks from diverse origins may experience short-term inflation deviations from a target. In these situations, and according to the nature of the shock (supply or demand/ permanent or transitory), economic agents expect the central bank to react so as to revert inflation back to the target. In Colombia, it is widely acknowledged that the recent inflationary surge has resulted in significant price changes and remains above the inflation target (Graph B2.1). At its peak, expectations derived from debt securities exceeded the inflation target and the historical average of inflation since 2000 by over two standard deviations.

In this context, it is important to have some measure that indicates the variations in the persistence of inflation expectation deviations vis-a-vis a specific level, as well as some measure reflecting the anchor perceived by the market. For this purpose, the methodology of Winkelmann (2014) was implemented, which allows estimating for each time window (s), both the anchor perceived by the market ($\bar{\pi}_s^e$) as well as the degree of anchoring, measured as the pace of the convergence to the anchor perceived by the market ($\frac{1}{\gamma_s}$). The model developed is based on the following equation, where the two parameters ($\bar{\pi}_s$ and γ_s) are estimated for each rolling window of 250 days (s):

Equation 1:

$$\pi_t^e = \bar{\pi}_s^e + exp(-\gamma_s\ (\pi_{t-1}^e - \bar{\pi}_s^e)^2)\left(\sum_{i=1}^{p} \alpha_i \pi_{t-i}^e - \bar{\pi}_s^e\right) + \varepsilon_t$$

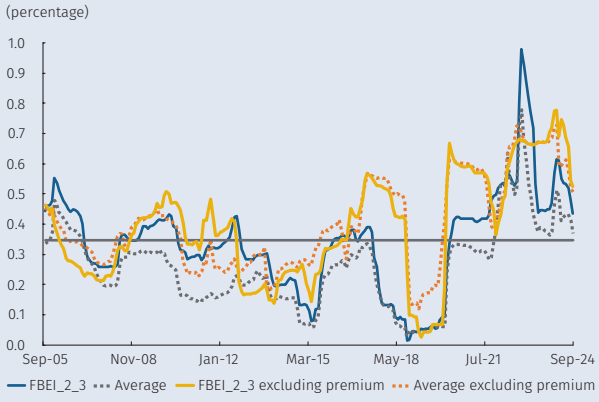
Equation 1 provides estimates for different terms of both BEI and FBEI,[4] although these were aggregated for the sake of simplicity. Most of the findings apply to all terms.[5] Graph B2.2 presents the anchor perceived by the market, which had been gradually declining since 2010 as inflation approached the Bank's long-term target. However, this downward trajectory was marred by certain exceptions when significant but transitory shocks occurred, as was the case in 2015 and 2016 when the effects of the international oil shock that occurred at yearend 2014 were felt, with repercussions on the exchange rate,

3 It is important to note that a 3-year BEI of x% indicates that the average inflation expectation over the next three years will have to be x. Thus, starting in 2024, the 3-year BEI indicates that inflation is expected to average x% for 2025-2027. Alternatively, an FBEI of y% represents the one-year-ahead inflation expectation for two years into the future. Consequently, if our start point is 2024, the FBEI suggests that the inflation expectation for 2027 positioning ourselves in 2026 would be y%).

4 Assuming terms of two to ten years. It should be noted that sections of the yield curve may be more prone to market volatility and liquidity premium changes, which are not covered in this analysis.

5 Additionally, the resulting inflation expectation measure can be "cleaned up" by discounting the inflationary risk premium. To construct the inflationary risk premium, the methodology of Espinosa-Torres et al. (2017) was followed. The results are similar, although they tend to show a lower anchor perceived by the market versus that of the original series, because, by definition, the longer the term, the higher the inflationary risk premium.

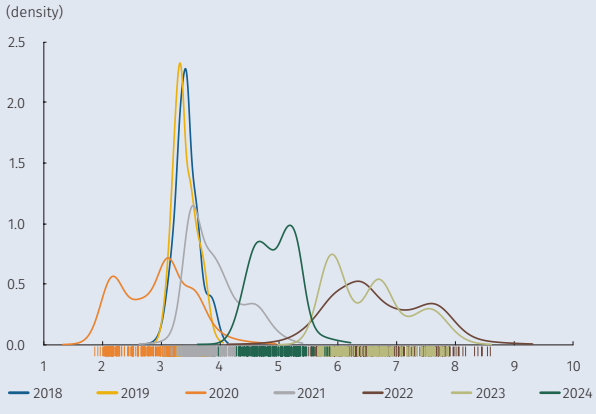
Graph B2.3
Degree of anchoring $(\frac{1}{\gamma_s})$ measured as the pace of convergence to the perceived anchor $(\bar{\pi}_s^e)$[a/]



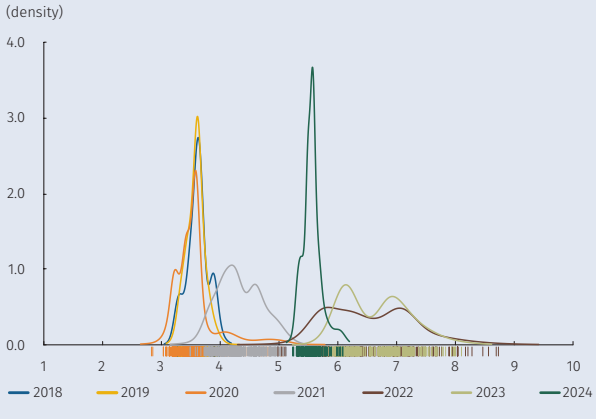
a/ The anchor averages are computed, considering the FBEI (i, j), where i = 1, 2, ... ,5 and j = 1, 2, ... , 5.
Sources: *Banco de la República*; own calculations.

Graph B2.4
Annual densities for BEI to 5 and 10 years

A. 5-year BEI



B. 10-year BEI



Sources: *Banco de la República*; own calculations.

exacerbated by a strong El Niño phenomenon that impacted food prices. Recently, after the peak observed in 2023, the market-perceived anchor has shown a significant reduction. Nevertheless, this level remains above the historical average, the pre-COVID levels, and *Banco de la República's* target. When discounting for the inflationary risk premium, something similar occurs, although here the levels fall closer to the 3% target.

For its part, γ_s is used as a proxy measure of the speed of convergence to $\bar{\pi}_s$. Here the concept of degree of anchoring is related to the persistence of the inflation expectation response to a shock and the swiftness of its reversion to the mean (perceived anchor). In this sense, the lower the persistence of the response of expectations to shocks, the more anchored the inflation expectations will be. Graph B2.3 shows how the recent inflationary shock generated pressures on the degree of anchoring, which, although these have gradually dissipated, remain above pre-pandemic levels.

2. Uncertainty and distribution

When the agents are unclear about the timing and persistence of the shocks affecting observed inflation, this uncertainty is reflected in changes in the variation and asymmetry of the distribution of inflation expectations.

Panels A and B of Graph B2.4 show the evolution of the probability densities for five- and ten-year inflation expectations using BEI rates discounted by the inflation risk premium. It can be seen that, in 2018 and 2019 before the COVID crisis, most of the probability mass was between 3% and 4%. During the COVID-19 period (2020-2021) the density of these expectations shifted significantly to the left, leveling off with downward biases. Subsequently, in 2023, expectations shifted significantly to the right, with a large amplitude reflecting the high uncertainty detected. Recently, the situation has improved, but these expectations are still far from "normal".

3. Transfer of short-term expectations to the medium- and long-term

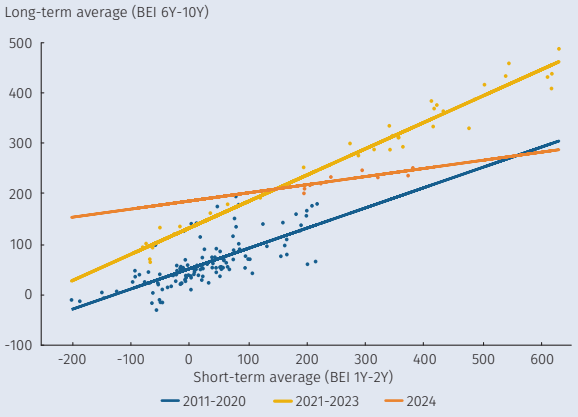
Finally, another way to monitor the degree of anchoring is by measuring the response or pass-through of shocks of short-term expectations to the dynamics of medium- and long-term expectations. In other words, under this concept of anchoring, if expectations are perfectly anchored, medium- and long-term expectations should be insensitive to short-term expectations and to current unforeseen inflationary shocks.[6]

Graph B2.5 shows a positive relationship between the short- and long-term expectation deviations from the target.

In the inflationary outbreak period between 2021 and 2023 (post-COVID-19), a greater slope is evident than in the previous decade. Recent improvements have been observed, with a lower slope than the previous period; however, the level of the deviations continues to be high.

6 This line of reasoning also includes the notion of codependence among these variables: the greater the codependence, the greater the transmission of shocks from short to medium and long terms.

Graph B2.5
Relationship between deviations from the target of short and long-term expectations



Sources: *Banco de la República*; own calculations.

The following are two econometric applications to measure the degree of anchoring under the notion of pass-through or codependence between short-term expectations and medium and long-term expectations.

The first, by Antunes (2015), uses a copula analysis to estimate the codependence between the tails of the distribution of short- to medium- and long-term expectations. In the case where the extreme movements of short-term and of longer-term expectations are independent, expectations are perfectly anchored. On the contrary, if there is codependence between these variables, the dynamics of the degree of anchoring alters and can be analyzed through the following equations:

Equation 2:

$$\lambda_U = \lim_{k \to 1} Pr\left\{\pi^e_{MP} > \pi^e_{MP\,(k)} | \, \pi^e_{CP} > \pi^e_{CP\,(k)}\right\}$$

Equation 3:

$$\lambda_L = \lim_{k \to O} Pr\left\{\pi^e_{MP} \leq \pi^e_{MP\,(k)} | \pi^e_{CP} \leq \pi^e_{CP\,(k)}\right\}$$

Where λ_U is the upper tail and λ_L is the lower tail of the distributions of the medium (long) term expectations (π^e_{MP}) conditional on the value of the short-term expectations (π^e_{CP}) being located at the quantile *k*.

The second, from Gefang (2012), uses the following regression model:

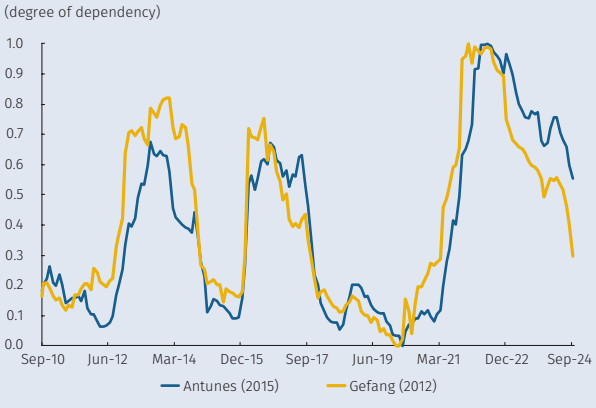
Equation 4:

$$\Delta\pi^e_{MP,t} = \beta\Delta\pi^e_{CP,t} + \varepsilon_t$$

Where Δ is the difference operator and β is a coefficient that captures the pass-through of short-term movements (π^e_{CP}) to medium-term movements (π^e_{MP}), which can be associated with a degree of deanchoring of inflation expectations in the concept of transfer.

Graph B2.6 shows the results of Antunes (2015) and Gefang (2012) estimates using 250-day (one year) rolling windows for short term (one to two years) BEI rates relative to medium-term (three to five years) BEI rates.7 Under this concept of anchoring, a value close to zero is desirable, which would indicate low codependence or pass-through, implying more anchored expectations. As can be seen, the degree of anchoring has improved significantly after the deterioration observed in 2023. Nevertheless, the levels of codependence and/or pass-through indicate a need for caution. Consequently, it is recommended that expectations be closely monitored so that the values may progressively converge closer to the Bank's inflation target.

Graph B2.6
Codependency and/or pass-through of short- and long-term expectations (BEI 3-5 years)



Note: The data reported corresponds to the main component of the 3- and 5-year BEI.
Sources: *Banco de la República*; own calculations.

Concluding remarks

The level and volatility of the various inflation expectations measures derived from debt securities (BEI and FBEI) increased significantly during 2023, as evidenced by the previous exercises. However, they have progressively exhibited a more favorable trend in the current

7 The results remain the same when comparing short-term with long-term (six to ten years).

year. Even so, the market's perception of the anchor's levels and the varying definitions of the degree of anchoring have not yet returned to values that are more consistent with the 3% inflation target set by *Banco de la República*.

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Appendix B2.1

This appendix provides the technical details of the EIB and FBEI rate calculation:

A. Break-even inflation rate (BEI):

The BEI $\pi_t^{e,n}$ rate over time *t* for a period of *n* years, is defined as:

$$\pi_t^{e,m} = \frac{\left(1+i_t^{Nom,\,m}\right)}{\left(1+i_t^{UVR,m}\right)} - 1$$

Where i_t^n and r_t^n are the returns of a bond with a nominal rate (ex. TES pesos) and a bond with a real rate (ex. TES UVR), respectively. The bonds have the same maturity of n years and the same credit rating. The BEIT rate $\pi_t^{e,n}$ reflects the average inflation expected over the following *n* years.

B. Forward break-even inflation rate (FBEI)

The FBEI $\pi_t^{e,a-b}$ rate over time t for a period of a-b years, represents the average inflation expectation over a period of b years that begins after a years. The FBEI rate $\pi_t^{e,a-b}$ is provided by:

$$\pi_t^{e,m-a} = \left[\frac{\left(1+\pi_t^{e,b}\right)}{\left(1+\pi_t^{e,a}\right)}\right]^{1/b} - 1$$

Where $\pi_t^{e,a}$ and $\pi_t^{e,n}$ are the BEIT rate over the terms of *a* and *n* years, where $n = a + b$.

Box 3
Recent behavior of foreign remittance inflows to Colombia

Diego Sandoval Herrera
Mateo Hernández Peñaloza*

In August 2024, it was projected that family remittance income received in Colombia surpassed USD 1000 million for three consecutive months, an amount of USD 187 million above the monthly average for 2023. The sustained increase of this external income has enhanced the significance of this component for the nation's macroeconomy and for the income and consumption of beneficiary households.

Remittances are defined by the international standard as household income from foreign economies arising mainly from the temporary or permanent movement of people to those economies. These transfers are made without consideration (IMF, 2009). As such, remittances are the outcome of a migratory process in which the family member residing abroad maintains a connection with their country of origin (Mejia, 2006). The specialized literature has identified several determinants of this item's behavior, such as the migrant's income (Rapoport et al., 2006), the performance of the economy where the migrant resides (Higgins et al., 2004), and the degree of altruism of the migrant who aspires to enhance the welfare of their household in their country of origin (Shimada, 2011; Bouhga-Hagbe, 2006).

What explains the recent growth of remittances in Colombia? This box studies the evolution of remittance income and its fundamental determinants. The analysis indicates that the changes in this income source correlate with the growth of the Colombian diaspora and the favorable conditions of labor markets in the host countries of the migrants. Similarly, remittance money has been increasingly contributing to the Colombian economy and serves as a significant resource for the expenditures of Colombian households. Moreover, the increase in remittances in Colombia approximates the regional average, indicating the absence of novel or unusual reasons contributing to this dynamism.

1. Evolution of remittance income

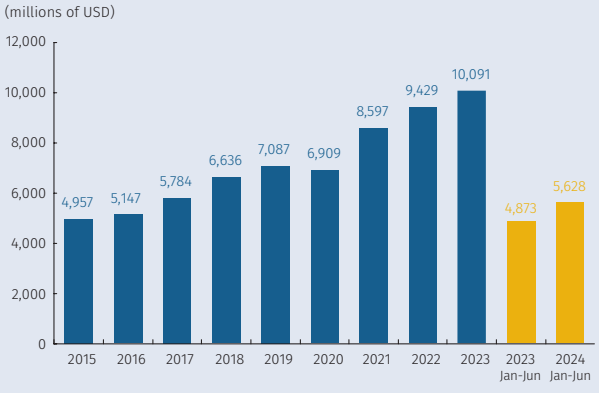
In 2020, the global economic crisis resulting from the pandemic triggered a 3% contraction in the remittance volume to Colombia. One year later it experienced a significant rebound, growing by 24% in 2021, largely attributed to the subsidies offered to households by the local governments where the Colombian emigrants reside so they could weather the crisis (Graph B3.1, Panel A). Subsequently, during the post-pandemic economic recovery process these transfers grew at an annual rate of close to 10% in 2022, and 7% in 2023, exceeding that same year USD 10,000 million for the first time. This occurred despite the deceleration observed that year in the growth rate due to inflationary pressures and a sluggish global economy (Graph B3.1, Panel B).

Remittances received by the country have been increasing in recent years at annual rates that surpass those of economic activity. Their share of the semester GDP reached 2.8% in

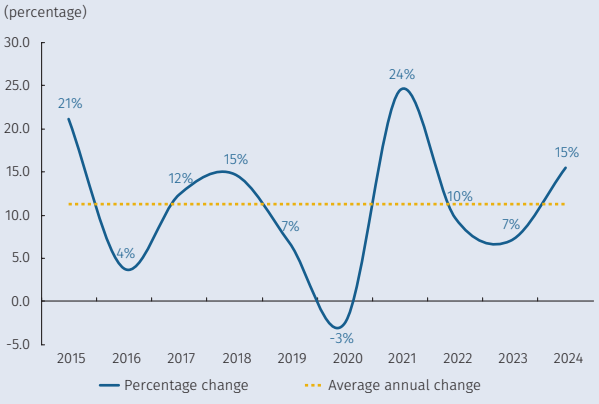
* The authors are researchers and members of the Macroeconomic Modelling Department. The views and opinions expressed herein do not necessarily reflect those of the Bank or its Board of Directors

Graph B3.1
Annual remittance income received by Colombia

A. Annual remittance income



B. Annual changes in remittance income



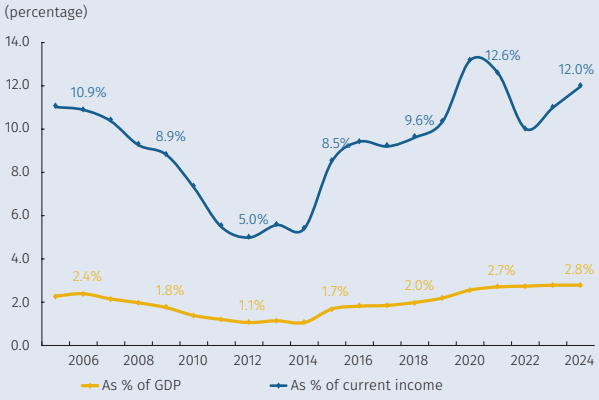
Sources: *Banco de la República;* own calculations.

2024, compared to 1.1% participation observed one decade before (Graph B3.2, Panel A). Likewise, remittances have also been increasing their share of the balance of payments current account income during the past decade. In the first half of this year, they accounted for 12% of external current income, while in 2014 their participation was only 6%.

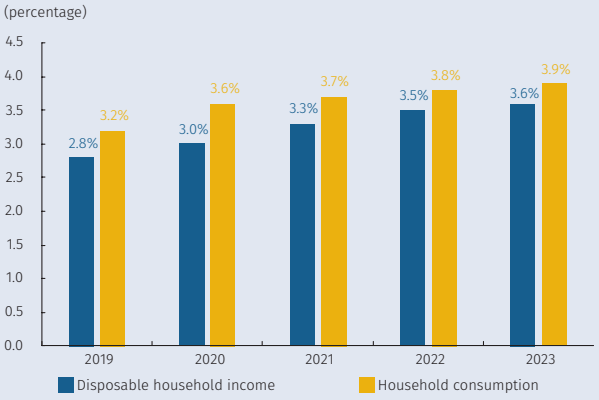
The continued growth of remittances to Colombia renders them an increasingly significant source of support for Colombian families, constituting 3.6% of disposable income and 3.9% of household consumption in 2023 (Graph B3.2, Panel B). This assistance is particularly important as it represents an income that is unaffected by the fluctuations of the local economy, enabling households to mitigate the impact of unemployment or other local eventualities (Shimada, 2011). In addition to contributing towards the household's maintenance, remittances may also serve an important role in the family's objectives, such as the children's education, the purchase of a family home, or facilitating investments that generate supplementary income for the migrant's household.

Graph B3.2
Contribution of remittance to the Colombian economy

A. Remittances as a percentage of GDP and current income of the balance of payments



B. Remittances as a percentage of household income and consumption



Sources: DANE; *Banco de la República*; own calculations.

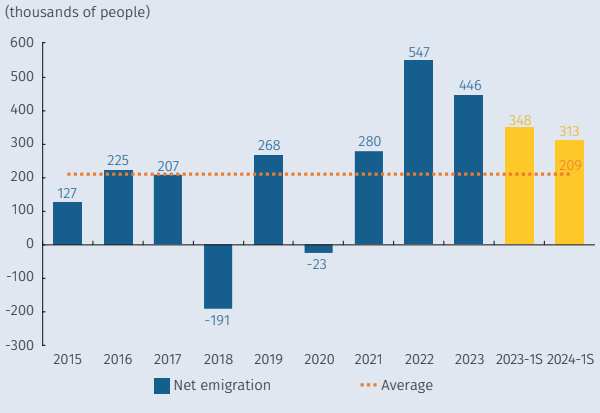
2. Context of remittance growth in Colombia

By its nature, the main determinant of remittances is the migratory flow (Garavito et al. 2019; Hagen-Zanker, 2008; Mejia, 2006). Hence the importance of highlighting the increase of the Colombian diaspora propelled in recent years as a result of a substantial migratory flow surpassing the averages of the past decade (Graph B3.3, Panel A). According to Migration Colombia data, in 2022 and 2023 approximately 547,000 and 446,000 Colombians emigrated from the country, respectively. Panel B of Graph B3.3 illustrates the gradual increase in family remittance income as the total number of Colombians residing abroad has expanded.

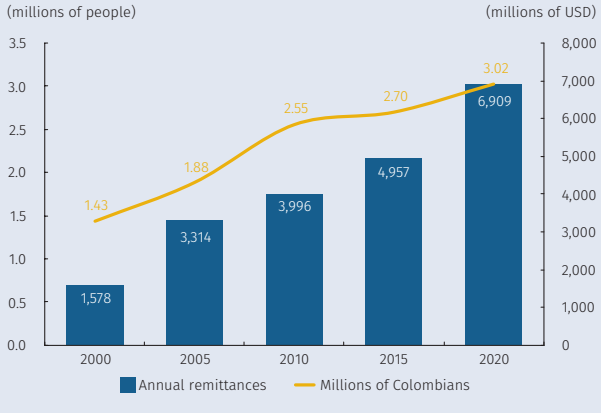
According to data from the United Nations, Colombian emigrants are primarily domiciled in Spain and the United States (Graph B3.4). It is estimated that in 2020 (the most recent available data), not considering the Colombians residing in Venezuela, 45% of the Colombian population living abroad was located in the United States and 25% in Spain. The Colombian population in the United States increased by 57% between 2006 and 2022, as indicated by official data from the U.S. Census Bureau. The number of Colombian nationals residing in Spain increased by 241% between 2016 and 2023, according to data from the National Institute of Statistics of Spain (INE for its Spanish acronym). Furthermore, the Colombian population has been a significant source of migration in countries such as Chile, Canada, and Panama, particularly since 2010.

Graph B3.3
Colombian migration and remittances

A. Net emigration of Colombians[a/]



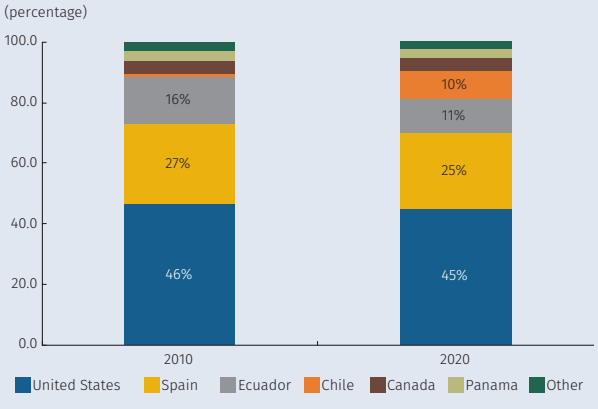
B. Colombians residing abroad and remittance income



a/ Corresponds to the indicator for net exits of Colombians leaving the country.
Sources: Migration Colombia; calculations of *Banco de la República*.

Sources: UN data; *Banco de la República*; own calculations.

Graph B3.4
Colombians living abroad (excluding Venezuela)



Source: United Nations.

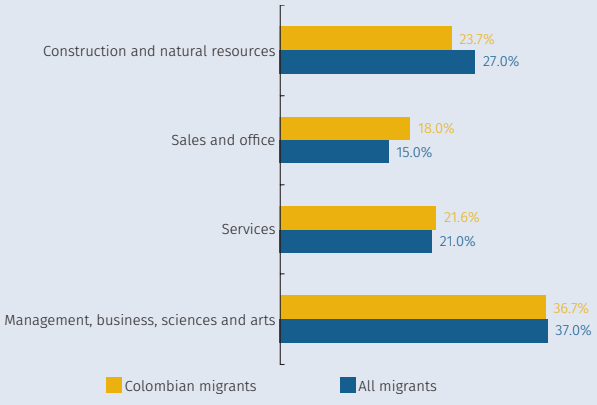
Generating remittances also requires that this emigrant population have an income that allows them to send their family transfers back to their homeland. Therefore, it is important to understand the economic situation of Colombian populations residing in the primary migratory destinations.

In the United States, the main source of employment since 2020 for emigrant Colombians in the U.S. centers on service-related activities, including sales and office work. (Graph 3.5, Panel A). The unemployment rate of the services sector has consistently been lower than the national average since 2022 (Graph B3.5, Panel B) and, because it generates close to 75% of the national GDP, may provide better employment opportunities for migrants. Moreover, the U.S. unemployment rate continues to fall from its pandemic peak.

In Spain, the real labor income indicator measured by the real wage cost has been steadily rising in the last decade, assuming a steeper trajectory since the beginning of 2022 (Graph B3.6, Panel A). Additio-

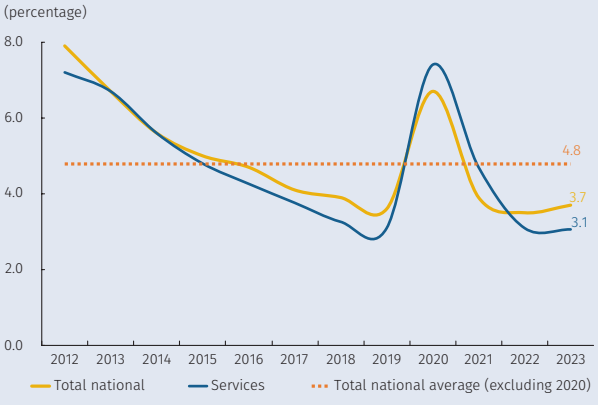
Graph B3.5
Migrants and the labor market in the US

A. Employed migrants as a percentage of the US labor force by economic sector



Source: U.S. Census Bureau.

B. United States unemployment

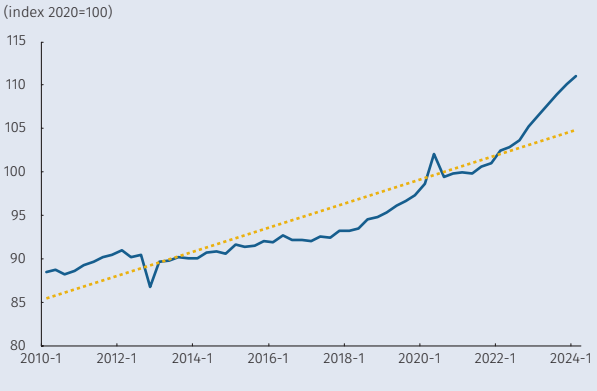


Source: U.S. Bureau of Labor Statistics.

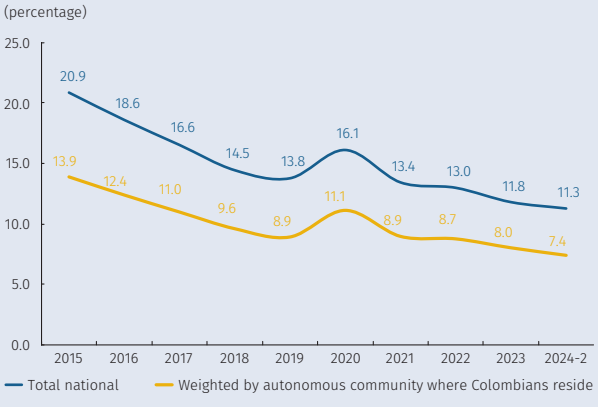
nally, unemployment rates reported by the autonomous communities with a greater concentration of Colombian immigrants, such as Madrid and Cataluña (Barcelona),[1] are lower than those of the national average (Graph B3.6, Panel B). The latter might provide additional benefits for the Colombians residing in that country through a greater possibility of finding better-paid employment.

Graph B3.6
Labor market in Spain

A. Real cost per effective hour of work for Spain



B. United States unemployment



Source: INE (National Institute of Statistics of Spain).

3. Characterization of remittance income

As previously noted, the United States and Spain are the primary recipient countries of Colombian migration. This is evidenced by the fact that two-thirds of the remittances received by the country originate from those diasporas (Graph B3.7, Panel A), with 52% of total remittances originating from the U.S. and 15% from Spain. North America accounts for 54% of total remittances, followed by the Eurozone at 22%, and Latin America at 17%, where Chile and Ecuador are significant contributors. Approximately 56% of the Colombian population

1 The authors are members of the International Sector of the Monetary Policy and Economic Information Department. The views and opinions expressed herein do not necessarily reflect those of the Bank or its Board of Directors.

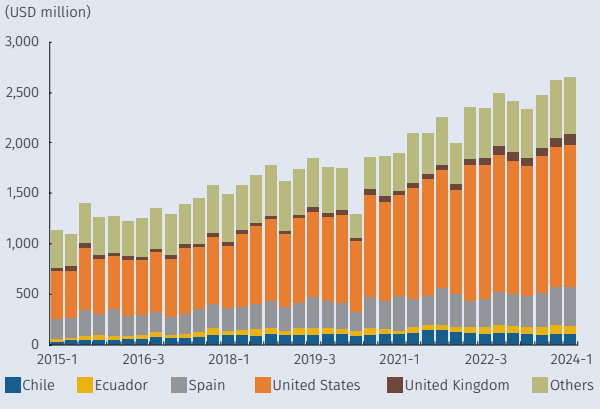
living in Spain is located in three autonomous communities: Madrid (22%), Cataluña (18%), and the community of Valencia (16%).

In recent years, the United States has consistently ranked as the primary source of remittances to Colombia, with its share increasing over the past decade. Remittances from Spain have diminished their proportion of the total value of external remittance inflows. Remittances from the United States, Chile, and the United Kingdom have increased more significantly than those from Spain (Graph B3.7, Panel B); however, the USD amount from the Iberian country has risen in recent years, doubling from 2015 to early 2024.

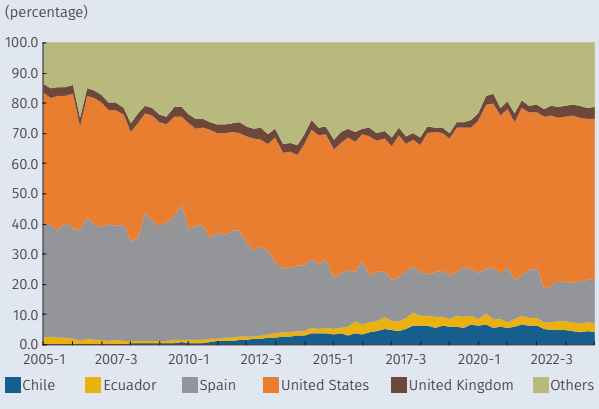
As for the leading remittance-receiving departments, Valle del Cauca is the region that historically received the largest share and, accordingly, accepted 25% of total external remittance inflows to Colombia based on first-quarter data for 2024. In the same period, Cundinamarca, including Bogotá, received 17% of remittances and Antioquia 16% (Graph B3.8, Panel A). Hence, almost 60% of remittances are clustered in these three departments, which historically have assumed a similar pattern. Of the remaining 40% share, the Eje Cafetero (Caldas, Quindío, and Risaralda), Atlántico, and Santander are the largest beneficiaries. Finally, there

Graph B3.7
Remittances by country of origin

A. Remittance income by country of origin



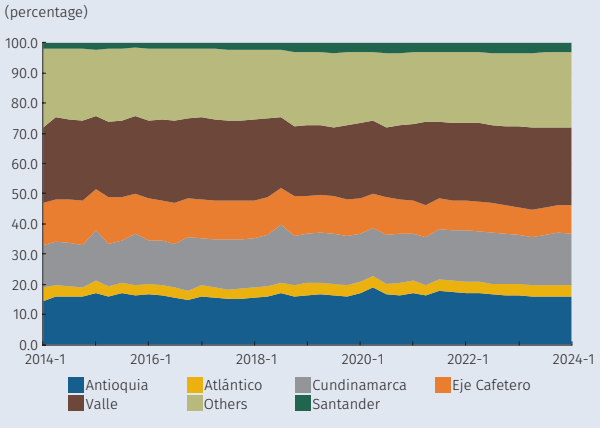
B. United States unemployment



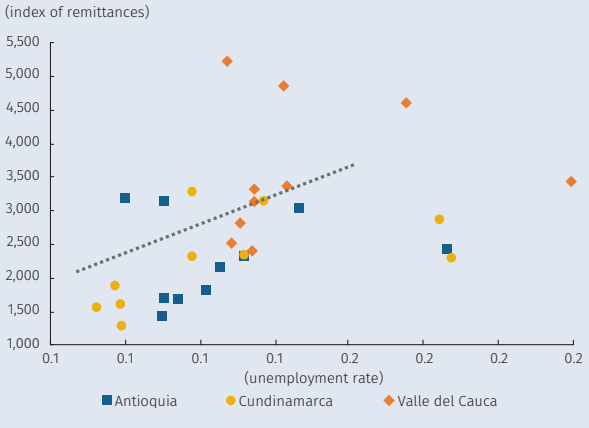
Sources: *Banco de la República*; own calculations.

Graph B3.8
Remittance receptor departments

A. Primary remittance receptor departments



B. Relation between unemployment and remittances in the primary receptor departments

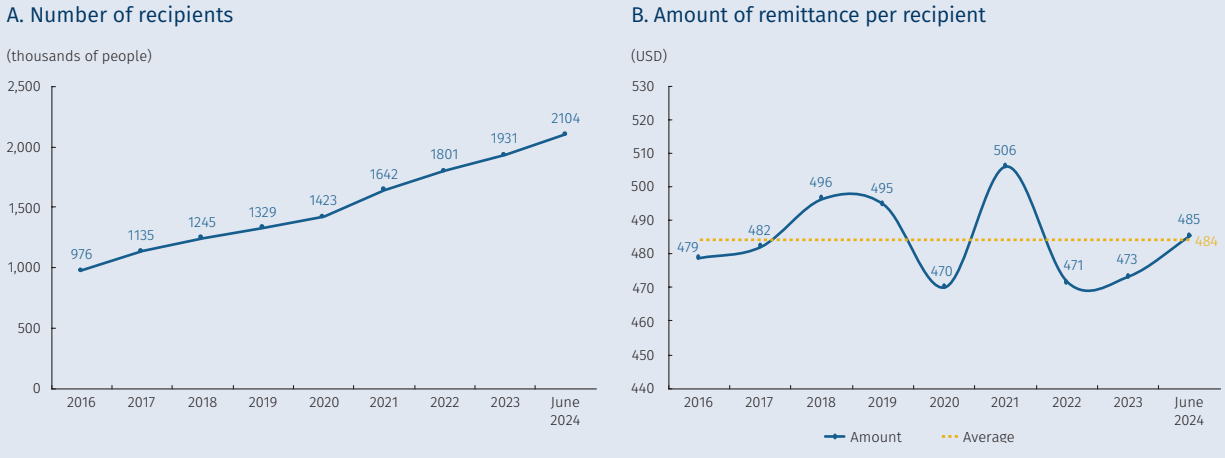


Sources: DANE; *Banco de la República*; own calculations.

is a positive correlation between the unemployment rate in the largest recipient departments and the receiving of remittances (Graph B3.8, Panel B).

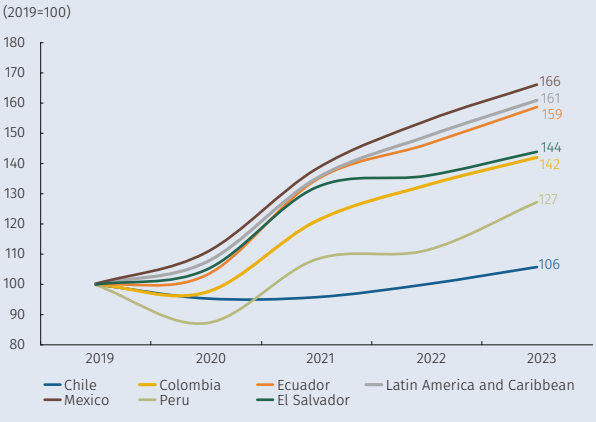
The greater migration activity of Colombians is also noticeable in the higher number of remittance recipients nationally: from just under one million beneficiaries in 2016, this figure rose to 2.1 million in June 2024 (Graph B3.9, Panel A). In addition, it is estimated that

Graph B3.9
Recipients and average amount of remittance In Colombia[a/]



a/ The data points are for December of each year, except for 2024 which is for June.
Sources: *Banco de la República;* own calculations.

Graph B3.10
Growth rate of remittances



Source: World Bank.

the current average monthly amount in USD of the remittance has remained steady, ranging between USD 470 and USD 506 per month (Graph B3.9, Panel B).

4. International comparison

The recent increase in remittances has been a widespread occurrence throughout the region. Remittances in Colombia climbed by 42% compared to pre-pandemic levels, while in Latin America and the Caribbean, they rose by 61% (Graph B3.10). The growth rates of foreign remittance income in Mexico (66%), Ecuador (59%), and El Salvador (44%) exceeded those in Colombia.

In 2023, Colombia placed in the fourth position in remittance inflows within Latin America, following Mexico, Guatemala, and the Dominican Republic. According to data from the Migration Data Portal, the principal remittance-receiving countries globally for that year were India, Mexico, China, the Philippines, and Pakistan.

Conclusions

The increase in remittances to Colombia has led to remittances assuming a greater share of the national GDP, the current income of the balance of payments, and the disposable income of Colombian households, potentially driving the favorable consumption performance seen recently. This growth trend is prevalent in several countries in the region and, particularly in the Colombian case, has been largely associated with the increase in Colombian emigration and employment opportunities of the migrant population abroad. The United States and Spain are identified as the principal destination countries

for Colombian migrants, as well as the primary sources of foreign remittance revenue for Colombia.

The greater migratory activity has also increased the number of remittance beneficiaries in Colombia. Moreover, the average monthly value in current dollars of remittances per recipient has continued close to its historical average over the past eight years. Valle del Cauca, Cundinamarca (including Bogotá), and Antioquia are the main recipient regions of these remittances, with a composition that has remained relatively consistent over time.

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Appendix 1
Macroeconomic Forecasts by local and Foreign Analysts[a/, b/]

	Unit	Oct 24	Dec 24	Oct 25	Dec 25	oct 26
Headline CPI	Monthly variation (average)	0.17	n. a.	n. a.	n. a.	n. a.
CPI excluding food	Monthly variation (average)	0.18	n. a.	n. a.	n. a.	n. a.
CPI excluding food and regulated	Monthly variation (average)	0.21	n. a.	n. a.	n. a.	n. a.
CPI food	Monthly variation (average)	0.10	n. a.	n. a.	n. a.	n. a.
CPI regulated	Monthly variation (average)	0.06	n. a.	n. a.	n. a.	n. a.
Headline CPI	Annual variation (average), end of period	5.73[c/]	5.47	4.13	3.89	3.44
CPI excluding food	Annual variation (average), end of period	6.47[c/]	5.66	3.93	3.67	3.33
CPI excluding food and regulated	Annual variation (average), end of period	5.42[c/]	5.08	3.59	3.42	3.15
CPI food	Annual variation (average), end of period	2.63[c/]	4.20	4.40	4.13	3.88
CPI regulated	Annual variation (average), end of period	10.01[c/]	7.72	5.80	5.50	4.37
Nominal exchange rate	COP per USD, end of period	4,190	4,145	4,130	4,179	4,145
Monetary policy rate	Percentage, end of period	9.50	9.00	6.00	6.00	5.50

	Unit	III-2024	IV-2024	2024	I-2025	II-2025	III-2025	IV 2025	2025	I-2026	II-2026	III-2026
GDP	Annual change, original series	2.1	2.0	1.8	2.3	2.4	2.6	2.6	2.6	2.8	2.8	n. a.
Unemployment	Thirteen cities, quarterly average	10.2	10.2	n. a.	11.5	10.6	10.4	10.0	n. a.	11.3	10.5	n. a.
IBR (90 days)	Effective annual rate, end of period	n. r.	8.4	n. a.	7.4	6.5	6.1	5.9	n. a.	5.8	5.6	5.7
Fiscal Deficit (GNC) [d/]	Share of GDP	n. a.	n. a.	5.6	n. a.	n. a.	n. a.	n. a.	5.1	n. a.	n. a.	n. a.
Direct Account Deficit[d/]	Share of GDP	n. a.	n. a.	2.6	n. a.	n. a.	n. a.	n. a.	3.1	n. a.	n. a.	n. a.

n.a.: Not available.
n.r.: Not relevant, given that the data has already been observed.
a/ The survey excluded the question related to the DTF starting with the April 2023 *Banco de la República's* Monthly Survey of Economic Analyst Expectations.
Expectations (EME for its Spanish acronym) conducted by *Banco de la República.*
b/ Is the response median to *Banco de la República's Monthly Survey of Economic Analyst Expectations*, except for the CPI and CPI excluding food, which are the response average.
c/ Data calculated based on the results of *Banco de la República's* Monthly Survey of Economic Analyst Expectations (EME).
d/ Positive values represent deficit and negative values represent surplus.
Sources: *Banco de la República*, Monthly Survey of Economic Analyst Expectations, conducted in October 2024.

Appendix 2
Main Macroeconomic Forecasting Variables

		Years										
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Exogenous variables												
External [a/]												
GDP of trading partners [b/]	Percentage, annual var., seasonally adjusted	2.0	1.6	3.2	2.5	1.5	-6.6	8.3	3.7	2.4	**2.0**	**2.2**
Oil price (Brent benchmark)	Dollars per barrel, average of the period	54	45	55	72	64	43	71	99	82	**81**	**76**
Federal funds effective rate (Fed)	Percentage, average for the period	0.13	0.39	1.00	1.83	2.16	0.37	0.08	1.68	5.03	**5.14**	**3.92**
5-year Credit Default Swap for Colombia	Basis points, average for the period	184	212	129	114	99	142	142	259	246	**184**	**204**
Internal												
Neutral real interest rate for Colombia	Percentage, average for the period	1.5	1.6	1.3	1.3	1.2	1.3	1.5	2.0	2.2	**2.4**	**2.6**
Potential GDP for Colombia (trend)	Percentage, annual change	3.3	2.8	2.4	2.3	2.3	-0.1	4.0	3.7	2.9	**2.9**	**2.7**
Endogenous variables												
Prices												
Total CPI [c/]	Percentage, annual change, end of period	6.77	5.75	4.09	3.18	3.80	1.61	5.62	13.12	9.28	**5.31**	**3.10**
CPI excluding food [d/]	Percentage, annual change, end of period	5.25	5.51	5.03	3.51	3.45	1.03	3.44	9.99	10.33	.	.
CPI for goods (excluding food and regulated items)	Percentage, annual change, end of period	7.27	5.91	3.24	1.40	2.18	0.63	3.31	15.04	7.11	.	.
CPI for services (excluding food and regulated items)	Percentage, annual change, end of period	4.64	5.26	5.38	3.13	3.45	1.29	2.18	7.41	8.96	.	.
CPI for regulated items	Percentage, annual change, end of period	4.43	5.63	6.26	6.65	4.81	0.73	7.10	11.77	17.24	**7.01**	**4.50**
CPI for food [e/]	Percentage, annual change, end of period	13.08	6.65	0.48	1.87	5.80	4.80	17.23	27.81	5.00	**4.27**	**2.00**
CPI for perishable food	Percentage, annual change, end of period	26.03	-6.63	5.84	8.88	8.66	2.49	24.42	36.44	-0.47	.	.
CPI for processed food	Percentage, annual change, end of period	9.62	10.74	-0.91	-0.08	5.04	5.43	15.32	25.33	6.71	.	.
Core inflation indicators [f/]												
CPI excluding food	Percentage, annual change, end of period	5.25	5.51	5.03	3.51	3.45	1.03	3.44	9.99	10.33	.	.
Core CPI 15	Percentage, annual change, end of period	5.59	5.98	4.21	3.22	3.78	1.88	4.42	11.55	9.46	.	.
CPI excluding food and regulated items	Percentage, annual change, end of period	5.50	5.48	4.67	2.57	3.10	1.11	2.49	9.51	8.42	**5.12**	**3.04**
Average of all core inflation indicators	Percentage, annual change, end of period	5.44	5.66	4.64	3.10	3.44	1.34	3.45	10.35	9.41	.	.
Representative market exchange rate	Pesos per dollar, average for the period	2,746	3,053	2,951	2,957	3,282	3,691	3,747	4,257	4,330	.	.
Real exchange rate Inflationary gap	Percentage, average for the period	9.5	2.5	-1.7	-0.7	3.6	6.8	2.2	6.7	1.4	**-5.4**	**-2.3**
Economic activity												
Gross domestic product (sats)*	Percentage, annual change, sats	3.0	2.1	1.4	2.6	3.2	-7.2	10.8	7.3	0.6	**1.9**	**2.9**
Final consumption expense	Percentage, annual change, sats	3.4	1.6	2.3	4.0	4.3	-4.2	13.8	8.9	1.0	.	.
Household final consumption expenditure	Percentage, annual change, sats	3.1	1.6	2.1	3.2	4.1	-5.0	14.7	10.7	0.8	.	.
General government final consumption expenditure	Percentage, annual change, sats	4.9	1.8	3.6	7.4	5.3	-0.8	9.8	0.8	1.6	.	.
Gross capital formation	Percentage, annual change, sats	-1.2	-0.2	-3.2	1.5	3.0	-20.7	11.6	16.0	-25.9	.	.
Gross fixed capital formation	Percentage, annual change, sats	2.8	-2.9	1.9	1.0	2.2	-23.6	16.7	11.5	-9.5	.	.
Housing	Percentage, annual change, sats	9.5	-0.2	-1.9	-0.4	-8.9	-32.7	39.8	2.0	-1.2	.	.
Other buildings and structures	Percentage, annual change, sats	10.2	0.0	4.6	-3.5	1.1	-30.8	0.9	-4.2	-4.8	.	.
Machinery and equipment	Percentage, annual change, sats	-9.3	-7.9	1.4	8.6	12.3	-13.3	23.3	30.3	-17.6	.	.
Cultivated biological resources	Percentage, annual change, sats	2.3	13.1	0.3	-3.1	7.9	-1.8	-0.9	-12.5	4.6	.	.
Intellectual property products	Percentage, annual change, sats	1.3	-12.0	1.2	1.5	-0.7	-8.3	3.4	8.9	0.7	.	.
Domestic demand	Percentage, annual change, sats	2.4	1.2	1.1	3.5	4.0	-7.5	13.4	10.2	-4.0	.	.
Exports	Percentage, annual change, sats	1.7	-0.2	2.6	0.6	3.1	-22.5	14.6	12.3	3.4	.	.
Imports	Percentage, annual change, sats	-1.1	-3.5	1.0	5.8	7.3	-20.1	26.7	23.6	-15.0	.	.
Product gap [g/]	Percentage	0.9	0.2	-0.8	-0.6	0.3	-7.1	-0.8	2.7	0.4	**-0.5**	**-0.3**
Short-term indicators												
Real production of manufacturing industry	Percentage, annual change, seasonally adjusted	2.1	3.5	0.0	2.9	1.3	-8.1	16.2	10.5	-4.7	.	.
Retail trade sales, excluding fuels or vehicles	Percentage, annual change, seasonally adjusted	6.4	2.0	-0.1	5.5	8.1	-1.5	12.3	9.1	-4.1	.	.
Coffee production	Percentage, annual change, cum. for period	16.8	0.4	-0.3	-4.5	8.8	-5.8	-9.5	-11.9	2.4	.	.
Oil production	Percentage, annual change, period average	1.5	-11.9	-3.6	1.3	2.4	-11.8	-5.8	2.4	3.0	.	.
Labor market [h/]												
Total national												
Unemployment rate	Percentage, annual change, period average	9.2	9.5	9.7	10.0	10.9	16.7	13.8	11.2	10.2	**10.3**	**10.2**
Occupancy Rate	Percentage, annual change, period average	61.3	60.5	60.0	59.1	57.7	50.4	53.1	56.5	57.6	.	.
Overall participation rate	Percentage, annual change, period average	67.5	66.9	66.4	65.7	64.8	60.4	61.5	63.6	64.1	.	.
Thirteen cities and metropolitan areas												
Unemployment rate	Percentage, annual change, period average	10.1	10.3	11.0	11.1	11.5	19.1	15.2	11.4	10.4	**10.3**	**10.4**
Occupancy Rate	Percentage, annual change, period average	62.6	61.7	60.5	59.6	58.8	50.8	53.8	58.1	59.5	.	.
Overall participation rate	Percentage, annual change, period average	69.6	68.8	67.9	67.1	66.4	62.7	63.5	65.5	66.3	.	.
Balance of payments [i/ j/]												
Current account (A + B + C)	Millions of dollars	-18,702	-12,587	-9,924	-14,041	-14,809	-9,267	-17,949	-21,185	-9,130	**-9,022**	**-13,807**
Percentage of GDP	Percentage, nominal terms	-6.3	-4.4	-3.2	-4.2	-4.6	-3.4	-5.6	-6.1	-2.5	**-2.2**	**-3.2**
A. Goods and services	Millions of dollars	-19,004	-13,451	-8,762	-10,556	-14,148	-13,105	-20,001	-16,400	-7,956	**-10,766**	**-15,999**
B. Primary income (factor income)	Millions of dollars	-5,450	-5,312	-8,046	-11,442	-9,716	-4,950	-8,723	-17,086	-14,095	**-13,163**	**-13,616**
C. Secondary income (current transfers)	Millions of dollars	5,752	6,177	6,883	7,957	9,055	8,788	10,775	12,301	12,922	**14,907**	**15,809**
Financial account (A + B + C + D)	Millions of dollars	-18,060	-12,339	-9,625	-12,954	-13,298	-8,113	-16,693	-20,466	-8,326	.	.
Percentage of GDP	Percentage, nominal terms	-6.1	-4.4	-3.1	-3.9	-4.1	-3.0	-5.3	-5.9	-2.3	.	.
A. Foreign investment (ii - i)	Millions of dollars	-7,403	-9,341	-10,011	-6,172	-10,836	-5,725	-6,381	-13,799	-15,970	.	.
i. Foreign Investment in Colombia (FDI)	Millions of dollars	11,621	13,858	13,701	11,299	13,989	7,459	9,561	17,183	17,145	.	.
ii. Colombian abroad	Millions of dollars	4,218	4,517	3,690	5,126	3,153	1,733	3,181	3,384	1,175	.	.
B. Portfolio investment	Millions of dollars	-9,091	-4,945	-1,800	862	24	-1,768	-4,595	427	8,664	.	.
C. Other investment (loans, other credits, and derivatives)	Millions of dollars	-1,981	1,781	1,641	-8,831	-5,820	-4,949	-6,371	-7,665	-2,739	.	.
D. Reserve assets	Millions of dollars	415	165	545	1,187	3,333	4,328	654	571	1,718	.	.
Errors and omissions (E&O)	Millions of dollars	643	247	299	1,087	1,510	1,153	1,256	719	804	.	.
Interest rates												
Policy interest rate [k/]	Percentage, period average	4.67	7.10	6.10	4.35	4.25	2.87	1.91	7.22	13.04	.	.
Policy rate expected by analysts [l/]	Percentage, period average										**11.35**	**7.08**
IBR overnight	Percentage, period average	4.7	7.1	6.1	4.3	4.3	2.9	1.9	7.2	13.0	.	.
Commercial interest rate [m/]	Percentage, period average	9.4	12.8	11.1	9.3	8.8	7.4	6.2	13.3	18.7	.	.
Consumer interest rate [n/]	Percentage, period average	17.2	19.2	19.4	17.9	16.5	15.0	14.3	21.1	27.9	.	.
Mortgage interest rate [o/]	Percentage, period average	11.0	12.4	11.6	10.6	10.4	10.1	9.1	12.9	17.7	.	.

Note: values in bold are forecasts or assumptions.
sats: seasonally adjusted time series, modified to eliminate the effect of seasonal and calendar influences.
a/ Quarterly data in bold are assumptions based on the annual forecast of each variable.
b/ Calculated with the main trading partners (excluding Venezuela) weighted by their share of trade.
c/ The medium term forecast corresponds to the average of the estimates obtained from the technical staff's central models (4GM and PATACON).
d/ Calculations by *Banco de la República*; excluding the CPI item weight for food and non-alcoholic beverages. Consult González, E.; Hernández, R.; Caicedo, E.; Martínez-Cortés, N.; Grajales, A.; Romero, J. (2020). "Nueva clasificación del Banrep de la canasta del IPC y revisión de las medidas de inflación básica en Colombia", *Borradores de Economía*, No. 122, *Banco de la República*, available at: https://investiga.banrep.gov.co/es/be-1122.
e/ Calculations by *Banco de la República*; equal to the CPI item weight of Food and non-alcoholic beverages produced by DANE (does not include the subclasses corresponding to meals outside the home). See González, E.; Hernández, R. et al, Ibid.
f/ Calculations by *Banco de la República*. See González, E.; Hernández, R. et al, Ibid.
g/ The historical gap estimate is calculated based on the difference between observed GDP (cumulative 4 quarters) and potential GDP (trend; cumulative 4 quarters) resulting from the 4GM model; in the forecast it is calculated from the difference between the technical staff's estimate of GDP (cumulative 4 quarters) and potential GDP (trend; cumulative 4 quarters) resulting from the 4GM model. For 2023, the change in the gap estimate is explained, in part, by an upward revision of the output gap in 2022, which in turn is due to the revisions of quarterly GDP growth by the DANE in its publication of November 2023.
h/ Rates are calculated based on seasonally adjusted annual populations.
i/ The results presented follow the recommendations of the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6). See additional information and method changes at http://www.banrep.gov.co/ balance-payments.
j/ Results for 2021 and 2022 are preliminary.
k/ Corresponds to the average annual monetary policy interest rate calculated with the working days of the series.
l/ These projections are calculated as the average of the interest rate that would be in effect in each year according to the median of the monthly responses to the Monthly Survey of Economic Analyst Expectations (EME) conducted by *Banco de la República* in October 2024.
m/ Weighted average of interest rates on ordinary, treasury and preferential loans.
n/ Does not include loans granted through credit cards.
o/ Corresponds to the weighted average of interest rate of the disbursements in COP and UVR (real value unit for its Spanish acronym) for the acquisition of NON-VIS housing (housing that is not social interest housing).

Appendix 2 (continuation)
Main Macroeconomic Forecasting Variables

		2019				2020			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Exogenous variables									
External [a/]									
GDP of trading partners [b/]	Percentage, annual var., seasonally adjusted	1.2	1.6	1.7	1.5	-0.7	-16.0	-6.7	-3.0
Oil price (Brent benchmark)	Dollars per barrel, average of the period	64	68	62	62	51	33	43	45
Federal funds effective rate (Fed)	Percentage, average for the period	2.40	2.40	2.20	1.65	1.23	0.06	0.09	0.09
5-year Credit Default Swap for Colombia	Basis points, average for the period	121	104	90	83	125	206	132	104
Internal									
Neutral real interest rate for Colombia	Percentage, average for the period								
Potential GDP for Colombia (trend)	Percentage, annual change								
Endogenous variables									
Prices									
Total CPI [c/]	Percentage, annual change, end of period	3.21	3.43	3.82	3.80	3.86	2.19	1.97	1.61
CPI excluding food [d/]	Percentage, annual change, end of period	3.27	3.22	3.37	3.45	3.26	1.40	1.57	1.03
CPI for goods (excluding food and regulated items)	Percentage, annual change, end of period	1.09	1.60	1.83	2.18	2.41	0.73	1.15	0.63
CPI for services (excluding food and regulated items)	Percentage, annual change, end of period	3.01	3.10	3.37	3.45	3.22	2.00	1.86	1.29
CPI excluding food	Percentage, annual change, end of period	6.33	5.24	5.03	4.81	4.27	0.44	1.19	0.73
CPI for food [e/]	Percentage, annual change, end of period	3.24	4.96	6.49	5.80	7.19	6.55	4.13	4.80
CPI for perishable food	Percentage, annual change, end of period	9.98	15.46	17.50	8.66	9.79	2.52	-3.42	2.49
CPI for processed food	Percentage, annual change, end of period	1.43	2.18	3.57	5.04	6.46	7.75	6.40	5.43
Core inflation indicators [f/]									
CPI excluding food	Percentage, annual change, end of period	3.27	3.22	3.37	3.45	3.26	1.40	1.57	1.03
Core CPI 15	Percentage, annual change, end of period	3.24	3.34	3.66	3.78	3.64	2.17	2.33	1.88
CPI excluding food and regulated items	Percentage, annual change, end of period	2.41	2.65	2.92	3.10	2.99	1.65	1.67	1.11
Average of all core inflation indicators	Percentage, annual change, end of period	2.97	3.07	3.32	3.44	3.30	1.74	1.86	1.34
Representative market exchange rate	Pesos per dollar, average for the period	3,135	3,240	3,338	3,412	3,540	3,850	3,731	3,662
Real exchange rate Inflationary gap	Percentage, average for the period	2.3	3.2	3.9	4.9	5.6	11.8	6.6	3.3
Economic activity									
Gross domestic product (sats)*	Percentage, annual change, sats	3.2	3.3	3.0	3.2	0.5	-16.8	-9.1	-3.3
Final consumption expense	Percentage, annual change, sats	3.7	3.9	4.4	5.2	3.9	-14.5	-7.4	1.1
Household final consumption expenditure	Percentage, annual change, sats	3.0	3.5	4.3	5.4	4.5	-17.0	-8.5	0.9
General government final consumption expenditure	Percentage, annual change, sats	5.9	6.0	5.0	4.2	0.7	-2.5	-2.8	1.5
Formación bruta de capital	Percentage, annual change, sats	7.8	2.4	5.6	-3.4	-11.5	-31.7	-17.5	-22.3
Gross capital formation	Percentage, annual change, sats	7.2	4.4	1.9	-4.3	-12.4	-41.4	-24.9	-14.9
Housing	Percentage, annual change, sats	-6.6	-7.7	-7.9	-13.3	-25.8	-47.9	-30.3	-25.4
Other buildings and structures	Percentage, annual change, sats	12.8	-1.2	1.1	-6.7	-10.2	-50.1	-37.4	-24.4
Machinery and equipment	Percentage, annual change, sats	14.7	21.6	10.1	3.1	-5.5	-37.3	-9.3	1.7
Cultivated biological resources	Percentage, annual change, sats	5.6	9.8	14.9	1.7	2.6	1.6	-7.9	-3.0
Intellectual property products	Percentage, annual change, sats	-1.5	-1.5	-1.1	1.5	-0.1	-13.4	-10.6	-9.0
Domestic demand	Percentage, annual change, sats	4.5	3.8	4.7	3.0	0.5	-18.0	-9.7	-2.9
Exports	Percentage, annual change, sats	5.0	8.8	2.0	-3.1	-6.5	-30.6	-28.2	-24.4
Imports	Percentage, annual change, sats	11.5	9.0	10.9	-1.2	-5.0	-33.6	-25.7	-15.6
Product gap [g/]	Percentage	-0.4	-0.1	0.1	0.3	-0.2	-3.8	-6.0	-7.1
Short-term indicators									
Real production of manufacturing industry	Percentage, annual change, seasonally adjusted	1.0	2.5	0.8	1.0	-1.5	-23.5	-7.3	0.0
Retail trade sales, excluding fuels or vehicles	Percentage, annual change, seasonally adjusted	6.2	7.3	9.5	9.2	6.4	-14.6	-3.4	5.5
Coffee production	Percentage, annual change, cum. for period	-1.9	6.6	4.9	24.1	-13.8	-1.9	-3.6	-4.6
Oil production	Percentage, annual change, period average	5.4	3.2	1.4	-0.2	-2.1	-15.7	-15.4	-14.1
Labor market [h/]									
Total national									
Unemployment rate	Percentage, annual change, period average	10.8	10.6	11.2	10.9	11.9	21.1	18.3	15.4
Occupancy Rate	Percentage, annual change, period average	58.4	57.7	57.2	57.5	55.7	44.4	49.0	52.7
Overall participation rate	Percentage, annual change, period average	65.5	64.6	64.4	64.6	63.2	56.3	59.9	62.3
Thirteen cities and metropolitan areas									
Unemployment rate	Percentage, annual change, period average	11.8	11.4	11.3	11.6	12.0	25.2	21.8	17.3
Occupancy Rate	Percentage, annual change, period average	58.8	58.9	58.7	58.7	57.0	44.1	49.0	53.3
Overall participation rate	Percentage, annual change, period average	66.7	66.4	66.2	66.4	64.7	59.0	62.6	64.4
Balance of payments [i/ j/]									
Balance of payments [i/ j/]	Millions of dollars	-3,820	-3,219	-4,303	-3,467	-2,295	-1,962	-2,013	-2,997
Percentage of GDP	Percentage, nominal terms	-4.8	-4.1	-5.3	-4.2	-3.1	-3.6	-3.0	-4.0
A. Goods and services	Millions of dollars	-3,138	-2,998	-4,406	-3,607	-3,098	-2,651	-3,263	-4,092
B. Primary income (factor income)	Millions of dollars	-2,615	-2,502	-2,301	-2,298	-1,369	-1,029	-1,172	-1,380
C. Secondary income (current transfers)	Millions of dollars	1,932	2,281	2,404	2,438	2,173	1,718	2,422	2,475
Financial account (A + B + C + D)	Millions of dollars	-3,520	-3,333	-3,740	-2,706	-1,735	-1,938	-1,857	-2,584
Percentage of GDP	Percentage, nominal terms	-4.4	-4.2	-4.6	-3.3	-2.3	-3.5	-2.8	-3.4
A. Foreign investment (ii - i)	Millions of dollars	-2,652	-3,626	-1,678	-2,880	-1,924	-1,725	-258	-1,818
i. Foreign Investment in Colombia (FDI)	Millions of dollars	3,394	4,090	3,163	3,342	3,175	1,371	844	2,069
ii. Colombian abroad	Millions of dollars	741	465	1,485	462	1,251	-353	586	251
B. Portfolio investment	Millions of dollars	-1,382	-282	137	1,551	-168	-3,429	323	1,506
C. Other investment (loans, other credits and derivatives)	Millions of dollars	-1,836	48	-2,453	-1,579	528	627	-2,127	-3,976
D. Reserve assets	Millions of dollars	2,351	526	254	202	-171	2,590	205	1,705
Errors and omissions (E&O)	Millions of dollars	301	-114	563	761	560	25	155	413
Interest rates									
Policy interest rate [k/]	Percentage, period average	4.25	4.25	4.25	4.25	4.23	3.26	2.24	1.75
Policy rate expected by analysts [l/]	Percentage, period average								
IBR overnight	Percentage, period average	4.3	4.3	4.3	4.3	4.2	3.2	2.2	1.7
Commercial interest rate [m/]	Percentage, period average	9.1	9.0	8.9	8.5	8.4	8.3	7.0	6.2
Consumer interest rate [n/]	Percentage, period average	18.0	17.2	16.0	15.5	15.8	15.5	14.8	14.2
Mortgage interest rate [o/]	Percentage, period average	10.4	10.5	10.4	10.4	10.4	10.4	10.2	9.6

Note: values in bold are forecasts or assumptions.
sats: seasonally adjusted time series, modified to eliminate the effect of seasonal and calendar influences.
a/ Quarterly data in bold are assumptions based on the annual forecast of each variable.
b/ Calculated with the main trading partners (excluding Venezuela) weighted by their share of trade.
c/ The medium term forecast corresponds to the average of the estimates obtained from the technical staff's central models (4GM and PATACON).
d/ Calculations by *Banco de la República*; excluding the CPI item weight for food and non-alcoholic beverages. Consult González, E.; Hernández, R.; Caicedo, E.; Martínez-Cortés, N.; Grajales, A.; Romero, J. (2020). "Nueva clasificación del Banrep de la canasta del IPC y revisión de las medidas de inflación básica en Colombia", *Borradores de Economía*, No. 122, *Banco de la República*, available at: https://investiga.banrep.gov.co/es/be-1122.
e/ Calculations by *Banco de la República*; equal to the CPI item weight of Food and non-alcoholic beverages produced by DANE (does not include the subclasses corresponding to meals outside the home). See González, E.; Hernández, R. et al, Ibid.
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g/ The historical gap estimate is calculated based on the difference between observed GDP (cumulative 4 quarters) and potential GDP (trend; cumulative 4 quarters) resulting from the 4GM model; in the forecast it is calculated from the difference between the technical staff's estimate of GDP (cumulative 4 quarters) and potential GDP (trend; cumulative 4 quarters) resulting from the 4GM model. For 2023, the change in the gap estimate is explained, in part, by an upward revision of the output gap in 2022, which in turn is due to the revisions of quarterly GDP growth by the DANE in its publication of November 2023.
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n/ Does not include loans granted through credit cards.
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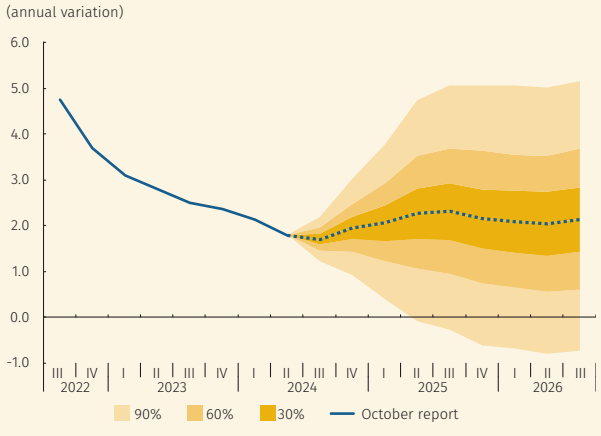
2021				2022				2023				2024				2025				2026		
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
0.1	19.3	8.9	6.4	5.2	4.0	3.4	2.2	2.8	2.8	2.2	1.7	1.8	1.5	**1.8**	**2.7**	**2.2**	**2.4**	**2.0**	**2.0**	**2.0**	**2.2**	**2.4**
61	69	73	80	98	112	98	89	82	78	86	83	82	85	79	**79**	**77**	**76**	**75**	**75**	**75**	**75**	**74**
0.08	0.07	0.09	0.08	0.12	0.76	2.20	3.65	4.52	4.99	5.26	5.33	5.33	5.33	5.27	**4.65**	**4.30**	**4.03**	**3.80**	**3.55**	**3.30**	**3.03**	**2.83**
110	131	143	185	209	238	275	314	283	275	219	207	172	187	189	**189**	**195**	**201**	**208**	**213**	**218**	**222**	**226**
1.51	3.63	4.51	5.62	8.53	9.67	11.44	13.12	13.34	12.13	10.99	9.28	7.36	7.18	5.81	**5.31**	**4.59**	**3.67**	**3.49**	**3.10**	**3.14**	**3.09**	**3.03**
1.06	2.70	3.03	3.44	5.31	6.84	8.33	9.99	11.42	11.62	10.88	10.33	8.76	7.64	6.55	.	.	.	.	.	.	.	.
1.05	2.57	2.97	3.31	6.41	8.30	11.57	15.04	15.08	14.26	10.44	7.11	3.08	1.43	0.60	.	.	.	.	.	.	.	.
0.89	1.61	2.01	2.18	3.79	5.21	5.93	7.41	8.73	9.04	9.14	8.96	8.29	7.89	7.48	.	.	.	.	.	.	.	.
1.52	5.93	5.94	7.10	8.32	9.80	11.46	11.77	14.72	15.64	15.81	17.24	15.78	13.29	10.15	**7.01**	**4.49**	**4.01**	**4.26**	**4.50**	**4.68**	**4.12**	**3.66**
3.92	8.52	12.40	17.23	25.37	23.65	26.62	27.81	21.81	14.31	11.47	5.00	1.73	5.27	2.73	**4.27**	**4.26**	**2.71**	**2.30**	**2.00**	**2.51**	**2.54**	**2.33**
1.58	8.69	14.82	24.42	41.87	31.21	35.50	36.44	19.66	10.06	13.93	-0.47	-3.42	12.46	2.92	.	.	.	.	.	.	.	.
4.60	8.47	11.74	15.32	20.69	21.50	24.14	25.33	22.53	15.62	10.72	6.71	3.41	3.16	2.68	.	.	.	.	.	.	.	.
1.06	2.70	3.03	3.44	5.31	6.84	8.33	9.99	11.42	11.62	10.88	10.33	8.76	7.64	6.55	.	.	.	.	.	.	.	.
1.67	3.36	3.79	4.42	6.93	8.41	10.04	11.55	12.41	11.62	10.34	9.46	7.64	7.10	6.18	.	.	.	.	.	.	.	.
0.94	1.87	2.28	2.49	4.51	6.06	7.49	9.51	10.51	10.51	9.51	8.42	6.77	6.01	5.49	**5.12**	**4.72**	**4.09**	**3.51**	**3.04**	**2.89**	**2.94**	**3.03**
1.22	2.64	3.03	3.45	5.58	7.10	8.62	10.35	11.45	11.25	10.24	9.40	7.72	6.92	6.07	.	.	.	.	.	.	.	.
3,559	3,695	3,847	3,882	3,910	3,919	4,384	4,812	4,758	4,424	4,044	4,074	3,921	3,919	4,097	.	.	.	.	.	.	.	.
-0.1	2.1	3.3	3.3	2.6	1.3	7.7	15.3	12.1	3.4	-5.2	-4.6	-7.6	-8.1	-4.3	**-1.6**	**-3.2**	**-2.3**	**-2.3**	**-1.6**	**-1.3**	**-0.6**	**-0.5**
1.5	18.7	13.4	11.1	8.0	12.1	7.4	2.1	2.4	0.3	-0.6	0.3	1.1	1.8	**2.4**	**2.3**	**1.9**	**2.8**	**3.4**	**3.7**	**3.8**	**3.9**	**3.8**
3.9	21.9	18.3	12.8	11.1	14.6	8.2	2.4	2.3	0.8	0.4	0.5	0.0	1.6	**2.0**	.	.	.	.	.	.	.	.
2.8	25.4	19.5	13.8	12.1	16.2	10.6	4.6	3.2	1.1	-0.2	-0.7	-0.1	1.7	**2.5**	.	.	.	.	.	.	.	.
8.8	8.8	13.1	8.6	5.8	7.3	-3.1	-6.2	-2.5	-0.8	3.8	6.4	2.0	0.9	**1.0**	.	.	.	.	.	.	.	.
-7.7	32.8	8.4	18.7	16.5	9.1	17.8	20.5	-11.6	-23.6	-32.4	-33.8	-11.3	1.5	**10.1**	.	.	.	.	.	.	.	.
3.7	42.1	15.2	13.5	8.3	13.2	14.0	10.8	-4.0	-7.7	-11.4	-14.9	-4.8	2.2	**4.4**	.	.	.	.	.	.	.	.
23.9	65.0	30.9	46.0	-0.2	3.5	6.5	-1.4	8.5	-0.9	-2.5	-9.0	-6.7	-0.7	**-3.7**	.	.	.	.	.	.	.	.
-14.9	31.9	0.3	-0.7	-8.9	-1.4	5.0	-10.4	-6.7	-5.7	-9.6	3.1	4.9	10.4	**13.5**	.	.	.	.	.	.	.	.
8.6	55.6	23.8	14.9	31.8	32.0	25.2	32.3	-8.5	-16.1	-17.5	-27.3	-5.7	-3.3	**0.2**	.	.	.	.	.	.	.	.
5.8	0.9	-4.1	-6.5	-16.2	-16.6	-11.8	-4.3	0.8	6.0	7.2	4.7	2.3	4.2	**3.4**	.	.	.	.	.	.	.	.
-5.4	6.5	6.9	6.5	10.3	12.2	10.4	3.1	-0.1	1.3	-1.3	2.8	0.9	-3.2	**-1.4**	.	.	.	.	.	.	.	.
1.6	24.5	16.7	13.0	13.1	13.8	10.1	4.2	-0.4	-4.0	-6.7	-4.5	-1.9	1.6	**3.3**	.	.	.	.	.	.	.	.
-9.6	13.5	25.8	36.0	15.9	24.1	13.9	-1.9	3.1	2.0	0.2	8.5	3.2	2.9	**4.0**	.	.	.	.	.	.	.	.
-5.2	46.6	40.2	34.6	40.2	26.7	23.1	8.2	-8.0	-14.7	-23.1	-13.8	-10.4	2.6	**9.4**	.	.	.	.	.	.	.	.
-7.1	-4.4	-2.6	-0.8	0.3	1.9	3.0	2.7	2.6	2.0	1.1	0.4	-0.1	-0.3	**-0.4**	**-0.5**	**-0.7**	**-0.7**	**-0.5**	**-0.3**	**-0.1**	**0.2**	**0.4**
6.7	27.7	20.3	13.0	11.9	20.9	7.0	3.7	-1.1	-4.5	-7.1	-6.0	-4.4	-3.0	.	.	.	.	.	.	.	.	.
4.2	19.3	15.9	11.0	12.5	21.9	5.7	-1.3	-1.7	-5.6	-4.8	-4.0	-4.4	-1.7	.	.	.	.	.	.	.	.	.
13.3	-24.7	-1.9	-18.8	-16.3	9.7	-18.2	-17.0	-0.7	-14.3	-2.1	24.9	3.5	30.3	22.9	.	.	.	.	.	.	.	.
-14.6	-5.1	-0.1	-1.7	-0.1	5.1	1.3	3.6	3.2	3.7	3.7	1.5	0.7	1.0	.	.	.	.	.	.	.	.	.
14.6	15.2	12.8	12.6	12.0	11.1	11.0	10.8	10.4	10.3	9.6	10.3	10.6	10.5	**9.9**	**10.2**	**10.3**	**10.2**	**10.2**	**10.2**	.	.	.
52.8	51.9	53.4	54.2	56.0	56.6	56.8	56.6	57.3	57.7	58.3	57.2	57.0	57.2	.	.	.	.	.	.	.	.	.
61.8	61.2	61.2	61.9	63.6	63.7	63.8	63.5	64.0	64.3	64.5	63.8	63.8	63.9	.	.	.	.	.	.	.	.	.
16.8	16.7	14.0	13.1	12.3	11.3	11.0	10.9	11.1	10.4	9.8	10.2	10.5	10.3	**10.1**	**10.4**	**10.5**	**10.4**	**10.4**	**10.4**	.	.	.
53.5	53.1	54.4	54.3	57.5	58.0	58.4	58.3	58.7	59.3	60.2	59.7	59.7	60.0	.	.	.	.	.	.	.	.	.
64.3	63.8	63.2	62.6	65.5	65.4	65.6	65.4	66.0	66.1	66.7	66.5	66.7	66.9	.	.	.	.	.	.	.	.	.
-3,105	-4,047	-4,835	-5,962	-5,474	-4,818	-6,198	-4,695	-2,971	-2,273	-1,783	-2,102	-2,286	-1,630	.	.	.	.	.	.	.	.	.
-4.0	-5.5	-6.0	-6.8	-6.3	-5.4	-7.0	-5.7	-3.7	-2.7	-1.8	-2.1	-2.2	-1.6	.	.	.	.	.	.	.	.	.
-3,688	-5,022	-5,259	-6,032	-5,033	-3,116	-4,507	-3,743	-2,202	-2,120	-1,459	-2,176	-1,922	-2,247	.	.	.	.	.	.	.	.	.
-1,867	-1,652	-2,339	-2,865	-3,617	-4,531	-4,795	-4,144	-3,864	-3,182	-3,690	-3,360	-3,696	-3,252	.	.	.	.	.	.	.	.	.
2,450	2,627	2,763	2,935	3,176	2,829	3,104	3,193	3,094	3,029	3,365	3,434	3,331	3,869	.	.	.	.	.	.	.	.	.
-2,789	-3,761	-4,504	-5,640	-5,037	-4,952	-5,736	-4,741	-2,552	-2,695	-1,509	-1,570	-1,684	-1,084	.	.	.	.	.	.	.	.	.
-3.6	-5.1	-5.6	-6.5	-5.8	-5.5	-6.5	-5.8	-3.1	-3.2	-1.5	-1.6	-1.6	-1	.	.	.	.	.	.	.	.	.
-1,438	-1,013	-2,528	-1,402	-3,651	-3,661	-2,959	-3,529	-3,563	-5,437	-3,467	-3,502	-2,765	-1,813	.	.	.	.	.	.	.	.	.
2,307	1,997	2,707	2,550	4,934	5,043	3,113	4,092	4,107	5,310	3,945	3,782	3,878	2,841	.	.	.	.	.	.	.	.	.
869	984	179	1,149	1,284	1,382	154	563	545	-128	478	280	1,113	1,029	.	.	.	.	.	.	.	.	.
1,319	-6,089	851	-675	1,866	-759	-233	-447	1,111	1,520	4,527	1,506	1,491	-253	.	.	.	.	.	.	.	.	.
-2,860	3,167	-2,981	-3,697	-3,379	-606	-2,703	-976	-467	824	-3,026	-70	-1,362	67	.	.	.	.	.	.	.	.	.
190	174	154	135	127	74	159	210	366	399	457	496	951	914	.	.	.	.	.	.	.	.	.
316	287	331	323	437	-134	463	-47	419	-421	275	532	602	547	.	.	.	.	.	.	.	.	.
1.75	1.75	1.75	2.39	3.69	5.68	8.56	10.81	12.53	13.17	13.25	13.23	12.82	11.93	10.92	.	.	.	.	.	.	.	.
															9.75	**8.50**	**7.25**	**6.50**	**6.08**	**5.92**	**5.75**	**5.75**
1.7	1.7	1.8	2.4	3.7	5.7	8.6	10.8	12.5	13.2	13.3	13.2	12.8	11.9	10.9	.	.	.	.	.	.	.	.
6.0	5.7	6.0	6.9	8.6	10.8	14.2	17.8	19.9	18.6	18.6	18.0	16.2	15.1	14.2	.	.	.	.	.	.	.	.
14.0	13.7	14.3	14.8	16.7	19.1	22.9	27.2	30.1	28.5	26.7	26.3	23.9	22.5	21.2	.	.	.	.	.	.	.	.
9.2	8.9	9.0	9.3	9.9	11.5	13.4	16.4	18.2	18.1	17.5	17.1	16.4	14.9	12.8	.	.	.	.	.	.	.	.

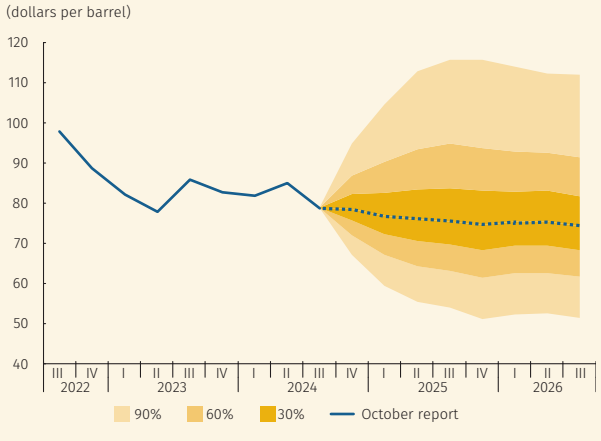
Appendix 3
Predictive Densities for other relevant Macroeconomic Forecasting Variables

Graph A3.1
Quarterly assumptions of 12-month growth of trading partners based on annual projections, predictive density[a/]



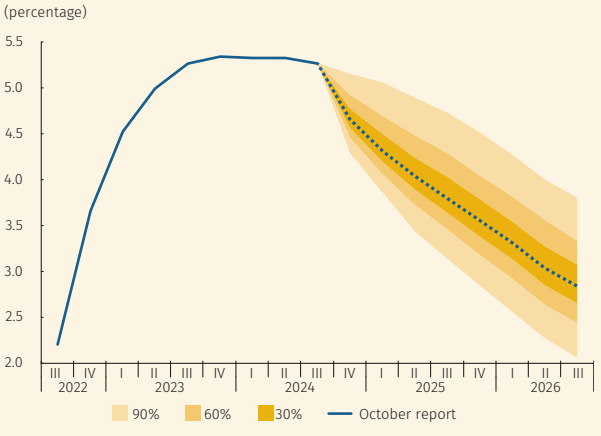
a/ The graph displays the probability distribution and its most likely path on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode).
Sources: Bloomberg, statistics bureaus, central banks; Calculations and projections by *Banco de la República*.

Graph A3.2
Quarterly oil price assumption, predictive density[a/]



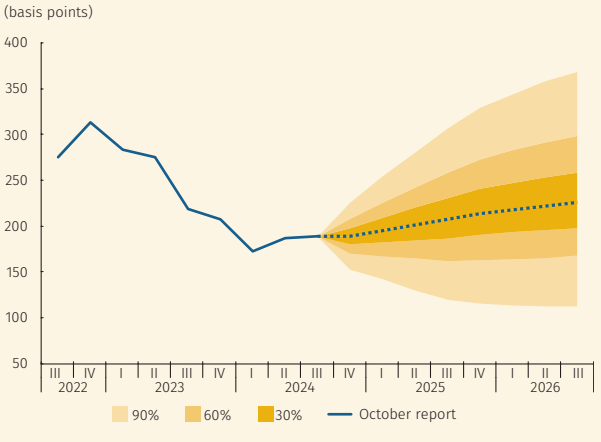
a/ The graph displays the probability distribution and its most likely path on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode).
Source: Bloomberg, calculations and projections by *Banco de la República*.

Graph A3.3
U.S. Federal Reserve quarterly interest rate assumption, predictive density[a/]



a/ The graph displays the probability distribution and its most likely path on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode).
Source: Federal Reserve Bank of Louis, calculations and projections by *Banco de la República*.

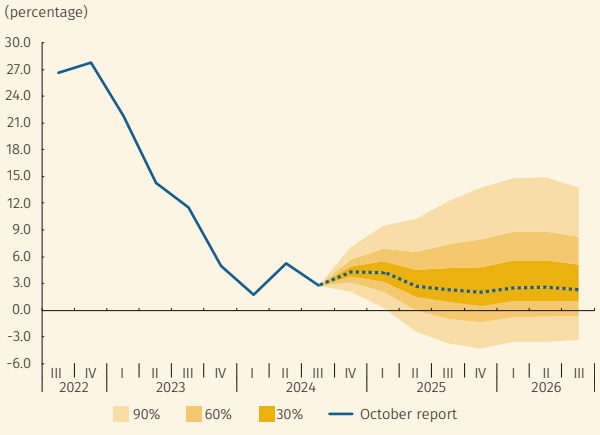
Graph A3.4
Colombia's quarterly risk premium (CDS) assumption, predictive density[a/,b/]



a/ Five-year credit default swaps
b/ The graph displays the probability distribution and its most likely trajectory on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode), using a combination of densities from the Patacon and 4GM models.
Source: Bloomberg, calculations and projections by *Banco de la República*.

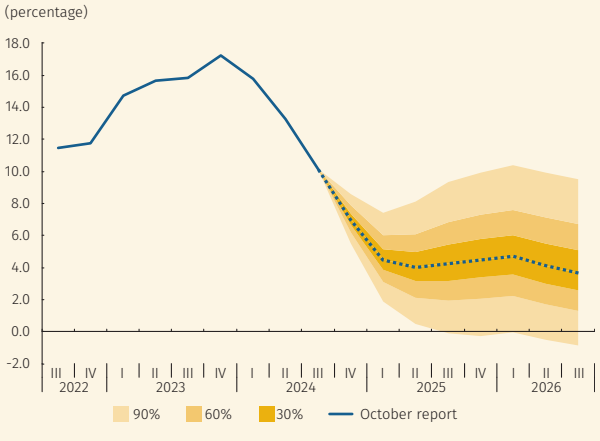
Appendix 3 (continuation)
Predictive Densities for other relevant Macroeconomic Forecasting Variables

Graph A3.5
CPI for foods, predictive density [a/]
(annual change, end-of-period)



a/ The graph displays the probability distribution and its most likely trajectory on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode), using a combination of densities from the Patacon and 4GM models.
Source: calculations and projections by *Banco de la República*.

Graph A3.6
CPI for regulated items, predictive density [a/]
(annual change, end-of-period)



a/ The graph displays the probability distribution and its most likely trajectory on an eight-quarter forecast horizon. Densities characterize the balance of potential risks with areas of 30%, 60% and 90% probability around the central forecast (mode), using a combination of densities from the Patacon and 4GM models.
Source: calculations and projections by *Banco de la República*.

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